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THE

Life and Remains

OF

EDWARD DANIEL CLARKE

PROFESSOR OF MINERALOGY

IN THE UNIVERSITY OF CAMBRIDGE.

BY THE

REV. WILLIAM OTTER, A.M.

IN TWO VOLUMES.

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THE LIFE

OF

EDWARD DANIEL CLARKE.

CHAP. VI.

Petersburg—Moscow—The Don—Sea of Azov—Crimea—Constantinople—Mount Ida—Plain of Troy—Cyprus—Jerusalem—Cairo—Pyramids—Aboukir—Alexandria—Zia—Eleusis—Parnassus—Constantinople—Pass of the Balcan.

Mr. Clarke and Mr. Cripps entered Russia at the worst period of the Emperor Paul's tyrannical and fantastic government. Hence the vexatious regulations of which he complains so heavily.

To the Rev. Wm. Otter, Jesus College, Cambridge.

Petersburg, Jan. 31, 1800.

——" We have been here five days. Our servants were taken from us, at the frontiers, and much difficulty had we with the Russian thieves as we came along. Long accustomed to Swedish honesty, it is difficult for us to assume, all at once,

a system of suspicion and caution: the consequence of this is, that they remove all the moveables in their way. I wish much to like the Russians; but those who govern them will take care I never shall. This place, were it not for its magnificence, would be insufferable. We silently mourn when we remember Sweden. As for our harps, there are no trees to hang them upon; nevertheless, we sit down by the waters of Babylon, and weep. They open all the letters, and therefore there is something for them to chew upon. More I dare not add; perhaps your experience will supply the rest.

"My astonishment was great at finding Mr. Ellis here: do you not remember my going from College to his seat in Hertfordshire, when poor W. Beadon, and Stracey, accompanied me as far as Barkway? Sir Charles* is a father to us all, and Ellis a brother. We have dined with somebody every day, and are engaged for a week to come. They also promise us balls and masquerades. I thought to study hard; but my wishes are vain—or else, I have Pallas, and Le Clerc, and Buxbaum, with a host of botanists around me. I dined this day with a gentleman from Astrachan, where we intend to go if possible. They all urge us to it;

* Now Lord Whitworth; at that time the English Ambassador.

and it is said to be very practicable. We have a magnificent suit of apartments at the Hotel de Grodno; which are to be open once a week to the sçavans, if the police permit. I found in Sir Charles's house, the very officer who was your fellow passenger in the packet, when we sailed from Yarmouth: do you not remember the young officer, from Neufchatel, who set Malthus a laughing, by coming up one day on the deck singing, with his mouth and night-cap all one side? We met him afterward in Hamburgh. A most remarkable plant has been sent to Copenhagen, or rather three plants, all of different classes, genera, &c., proceeding by three different stems from the same root. Let me say five words of botany, that dear science! I won't keep you long in agony.

I found in Norway a species of the Stellaria, I believe the Stellaria Arenaria, which possessed a character something of this kind. The plant itself was of the Decandria Trigynia, but near its root was a most remarkable florescence exhibited among the foliage; which fell together, like the turning of a cabbage; and, on separating the leaves, it betrayed a perfect flower of the Tetrandria Monogynia.

"Perhaps on the very spot where you collected the Pyrola Uniflora, in Norway, I obtained its seed. What a beautiful flower! and how interesting for us! I gathered it, and gave it you on the Hunne-

berg mountain—on the day and hour of our separation. Will it grow in Jesus College garden? Cripps would be a botanist, if he had a better tutor—set him to hunt for a flower, and he is sure to find it; you cannot offer him better sport. He would have made a fine greyhound to Linnæus.

"I held forth in the schools at Abo; determined to astonish their weak minds, I attacked the most established truths, and they were dumb. 'Alas!' said I, 'you are as reeds in the breath of opinion—It blows, and you bend with trembling. Linnæus told you—'Naturalia tarifariam seu in tria regna naturæ dividuntur: Lapideum, Vegetabile, and Animale;' and then you bawl out 'recte statuit Linnæus,' taking his creed in part. When he affirms 'Natura modificat Terras in Vegetabilia, Vegetabilia in Animalia, vix contra; utraque resolvit iterum in Terras,' what becomes of the division? The universe is one; and the soul of matter is itself material. What Linnæus applied to plants, applies to all—light is the soul of plants, and it is the soul of universal nature, and its base is oxygen. To prove this, we can shew the absorption and deposition of oxygen by means of light. Motion is generated by the affinity of substances; and as all substances have their greatest affinity for light, without light there could be no motion. At the moment of creation, ere motion was communicated to matter, it is said, 'dark-

ness was upon the face of the deep.' 'Let there be *light!* said the Deity, and *motion* was instantly communicated!'

"What was the fate of all this farrago? you exclaim! Why, in a twinkling I had a train of pupils to the new philosophy.—'Novelty,' said I, 'it possesses not. It is the theory of Moses—to your Bibles go for information.' The dispute ran high and I left it to subside; fearful lest by throwing too much *light* upon the *matter*, the *motion* would be too much for me."

To his Mother.

PETERSBURG, Feb. 24, 1800.

"I know not how it happens, but in this journey I hardly ever receive any news from home. Sure it is easy to take up a pen for a minute, when it is considered what value we place upon a few words. Cripps gets letters, almost every post; and in those I sometimes hear that all is well at Uckfield. I would give fifty guineas, for as many words in thy hand-writing, best of parents! even at this moment. But when I see letter after letter come to Cripps, and not one word to me, I think it very hard. Think how I am employed from morning to night, and often night and day—

scarcely ever experiencing one moment of repose —and yet I write; which I assure you is not easy when every instant has its important occupation. If I write letters, my journal suffers; and often I have time and strength for neither.

"I know it will please you to learn that we are both in perfect health. I have not been better for the last twelvemonth. You have proof of this whenever you find I can sit down to write, in fair characters, a long letter about nothing.

"We have this day twenty-six degrees of cold, which is beyond what people in England are able to imagine. It is equal to forty-five degrees and a half, below freezing, of Fahrenheit, as we estimate it from the scale of Celsius. In Petersburg, not a house is without a thermometer, and advertisements appear regularly in the papers, stating that if the cold is below seventeen, there will be no opera, which is the case this evening. Yet it is the most charming weather possible. There is no humidity in the atmosphere, which makes the severest season more tolerable than an English winter. Cripps and I walked to-day, and basked in the sunshine, while the Russians, as they passed in sledges, with their long beards, had their eyebrows, eye-lashes, and hairy chins, covered with icicles. The English bear cold better than the natives. Even I have exposed my face to the air, when the driver of my sledge, behind me, has had

his face frozen, and covered with livid spots, which we remove by rubbing the skin with snow. I have had my face only once frozen, a small spot in my left cheek. Mr. Cripps often gets a spot or two, and his servant John had all one side of his face, and part of his nose, congealed. No injury ensues if you rub it with snow; and we laugh at one another, when these strange marks appear; which make you look as if you had stuck wafers on your face.——

"Will you know what a kibitki is, with which you may travel all over Russia, at the rate of one hundred English miles a day? It is such a pretty looking affair as this.

(Here he gives a sketch of a kibitki with his pen.)

"Should you like to travel in a kibitki? Because if you come here, it is done in a moment. You have only to sit still in your carriage, whenever one of the royal family passes, instead of getting out and pulling off your pelisse, cloak, great coat, gloves, hat, &c. and you are bundled into a kibitki, and sent to Siberia, with your nose slit. All letters are opened; and if my beautiful drawing was seen by a police officer, I should visit the mines of Tobolski, with expedition and economy. I think, therefore, it will be as well to wait till our ambassador sends a courier to England, before I dismiss my letter.

"The statue of Peter the Great is a very fine statue; but an equestrian figure, which is colossal, upon a mountain, which is in miniature, is an absurdity in proportion, equally offensive to taste and reason. The carnival began, I believe, yesterday. We have balls, masquerades, races, and amuse ourselves with sliding down a slope of ice, of about the height of Uckfield church steeple, which is a favourite pastime here. The court go first, and after the court the nobles, and after the nobles, the foreigners of distinction; after the foreigners, the merchants with their wives and daughters, and then come the *bourgeois*. ——

"Did you ever know that my father's letters on the Spanish nation were translated into German? How it would have pleased him! A copy of them, in the German language, is in the public library of the University of Abo, in Finland. ——

"This is the most expensive place I ever was in. Nobody is of consequence here, but in proportion to the money he can spend. The nobles, ambassadors, and even the English merchants, keep open tables, at all which a stranger is expected to dine. No invitation is sent. You inform the upper servant, or maître d'hotel, in the morning, and present yourself, without ceremony, at the hour of dinner. What I now tell you is a fact, incredible as it may appear—*fifty pounds* are often paid for a dish of fish. Our ambassador has given twenty. And

this fish, called sterlet, is not better than a turbot, nor so good—only it comes from the Volga, a long way off, and is difficult to procure. At the same table we see, veal from Archangel, mutton from Siberia, sterlet from the Volga, apples from Astrachan, grapes from Persia, porter and strong beer from London, wines from France, Spain, Italy, &c. strawberries from Lapland; in short, the whole world is ransacked to supply their sumptuous banquets.

"We shall go to Moscow as soon as possible: the prin cipal part of the nobles are there; and we are told we are to witness still greater doings when we arrive: from Moscow to Vienna."

To the Rev. Wm. Otter, Jesus College, Cambridge.

"PETERSBURG, March 5th, 1800.

——"The plates for the first part of Vol. II. of Pallas's Flora Russica, are finished; but the typographical and descriptive part is not yet arrived from Germany. It will be published in the spring. The author of the Flora Petropolitana assures me, it will all be completed gradually. I have purchased the two first. They are already scarce and expensive. I shall not buy duplicates for you; because you will always use mine, and I know you will be angry, if the number of our

acquisitions should be diminished by superfluous profusion in any one. But you must write me word to Vienna, if you bought the Flora Danica; because I am commissioned to inquire if you possess it.

"Did you procure the Gentiana Glauca in Norway? We found it near Roraas, and on the mountains above Tronheim. Dr. Muller of Christiania wanted to persuade me that it was the Gentiana Campestris. It is lovely beyond description. Scarcely peeping above the earth, as blue as the voluptuous eyes of May. I send it to you.

(Here he gives a painted representation of the flower.)

"I now recollect, that the plant I once brought for Newton, from the highest of the Swiss Alps, and which I found blooming on the snow, was the Gentiana Nivalis; perhaps the most elegant of all the family. This last I will give you seed of. What an acquisition I have just made here! many hundred seeds of Siberian, Russian, and Kamschatkan plants. I will pledge myself to bring home all the plants in the Flora Russica, Flora Lapponica, Flora Helvetica, and Flora Germanica. You must supply what is wanting to complete the Flora Swessica. We had last night the good fortune to procure a copy of Gmelin's Flora Siberica;

but it is not quite complete. Why does Linnæus pretend that the Cratægus Aria is peculiar to Sweden? It is found here, and, according to Pallas, also in England, under the name of the Cumberland Hawthorn. I saw this morning a collection of botany amounting to eight thousand plants. The owner will not sell it. But Dr. Muller of Christiania would sell his collection of Mineralogy, for 1200*l.*, and perhaps for 1000*l.* Certainly there is no other equal to it in Europe. A subscription at one guinea per head would obtain it for our University, but alas! they would sooner spend, individually, twenty times that sum, to ride in a stage coach to and from London, than, collectively, a single sous for the advancement of science. I should not wonder if the inspectors of the Petersburg post-office, profiting by the information this letter may afford, when they open it, were hereafter the cause of its being brought to a Russian academy.

"To other matters haste we now. The masquerades here are very grand. The Empress, with all the court, and two thousand persons, attended on Sunday evening. But the masquerade began in the morning at ten o'clock. We had another last night: Cripps appeared in five different characters in the course of the evening. Your friend Mrs. G. was most brilliant—crimson and gold. We are often invited there, but we do not go as we visit

the opposite party.——I went with them last night to the masquerade, and Miss G. wore my hat and feather.

"The carnival is now over. It is the holiday of the year. The astonishing procession of sledges to the ice mountains, is a proof that the population of this place is greater than they pretend. It would make you tremble to join the Russians in their favourite amusement. The height of these mountains is as great as the tower of Jesus chapel. A fellow places himself on a small sledge, and takes you in his lap; then leaning backwards with his hands on the ice, which act as rudders, you are committed to the winds, and down you go, like lightning; acquiring a velocity which carries you for half a mile on the plain surface of the Neva below, till you reach an opposite mountain and descend as before.

"I get no letters from England. In mercy, write a few lines, *à la poste restante, à Vienne.* We go to Moscow in ten days, and from thence to Siberia. In this last assertion, I speak in hope. It must depend on the state of the snow. If we cannot sledge it, we shall hardly have time. What would I not give to complete my plan; to follow the waters of the Volga to the Caspian; to cross the Caucasus, and seize old Achmet by the beard, in the walls of his seraglio. As for the eastern provinces of this mighty empire, if a man does not

spend a couple of years previous to his expedition in serious appropriate study, his researches would avail little. What do we know of those northern tribes, the Samoyedes; the Jakoutes; the Tchutshkis; the Koriaks; or the Kamschatkans? Most of them I believe are Fins; but what a world of science ought a man to possess, who shall attempt to investigate the history of Siberian Tartary?—of the Cossacks?—the Calmucs?—and the Tungusians? And to travel without rendering some illustration of a dark subject, is like a tasteless sot in a Dutchman's garden; wandering in a labyrinth, for the sake of losing his way. I don't know what Pallas may do; but at present he seems to have thickened the waters of science, by stirring up the mud, to shew that something is at the bottom. Botany, attended with less difficulty, and greater satisfaction, invites for a small portion of the year; and Mineralogy might supply the rest. One incitement to Botany, when it is pursued upon an extensive, general, and philosophical scale, is, that it makes us acquainted with the productions of climates and countries removed from our notice in the observation of those which are before us.—— How remarkable are the characteristic changes in the Betula! In every degree of latitude, advancing to the pole, proportionably diminishing. I found the Betula Nana on the frontiers of Lapland,

not larger than the palm of my hand; and a species of the Salix the size of one's thumb-nail.

"By the first ship that sails for England, I shall send the Rubus Arcticus. It will be conveyed to the Botanic gardener at Cambridge. Make him take care of it for me, and tell him, if it be alive when he receives it, he must place it in the earth, and cover it entirely, till the beginning of June. Then he must take off the cover all at once, and leave it exposed. This is the only method which has been found that will ensure its bearing flowers and fruit, so far to the south. It was recommended to me by Professor Afzelius, of Upsal. The plant will be sent in a pot. At this moment its roots are with me in moss, frozen as hard as iron; and they have been in that state these last three months. The cold here is now severe. We have it, daily, from eighteen to twenty-five degrees of Celsius, below 0. Yet the sky is serene, and without a cloud. Next Monday, a party of ladies come to spend the evening in our apartments, which are handsome and spacious, in the Hotel de Grodno. We have prepared for them a Russian concert, consisting of thirty-seven performers upon horns, some of which only play one note."

To the Rev. Robert Malthus.

"PETERSBURG, March 12th, 1800.

"Your interesting letter, dated November 25th, only reached me last Sunday. Captain Popham, the messenger, is ill at Umea, in Ostero Bothnia. He has been obliged to go all round by Tornea, owing to the state of the ice between Grislehamn and Abo; I had great risk for my life in that passage. A courier goes to London to-morrow; so that I shall be able to lay aside the order of Mum! which prevails here in its utmost force, and write freely. I have had a padlock on my lips the whole winter, with these initials upon it, P. P. It is impossible to say what will be the end of things here; or whether the Emperor is more of a madman, a fool, a knave, or a tyrant. If I were to relate the ravings, the follies, the villanies, the cruelties, of that detestable beast, I should never reach the end of my letter. Certainly things cannot long go on as they do now. The other day the soldiers, by his order, cudgelled a gentleman in the streets, because the cock of his hat was not in a line with his nose. He has sent the Prince de Condé's army to the right about, which is hushed up, and it is to appear that they are ceded to Britain. He refuses passports even to ambassadors for their couriers. One is not safe a mo-

ment. It is not enough to act by rule, you must regulate your features to the whims of a police-officer. If you frown in the streets, you will be taken up.

"E. is delighted and vain in the present you have sent him. Sir Charles C., Lady H., &c. &c. are all quarrelling who shall read it first. I had been holding forth about it, long before it arrived; and E. is much flattered that he received it.——

"I will answer all your queries. As to our disappointment at Tronheim, it was heightened in finding that a letter from us, from Stockholm to you, was lying at the post-office, when you were there, and you did not receive it. It contained matters and information that would have interested you. Among others it made known to you the arrival of Lord Grenville's letters, which at that time would have given you satisfaction.——

"Cripps now pants for a dip in the Caspian. Joking aside, I cannot say too much in his praise; he thinks no exertion too great, if it contribute to improve my health, and make me happy. This is a selfish eulogium, but it must go for gratitude. He begs I will tell you, that he has too much lead for a tourist; but nevertheless, has seen the phœnomenon, and explored the mountains of Lapland

"I will answer your inquiries respecting the 'Maison des Enfans trouvés,' in my next. I am at present much occupied with Botany, though it is

not the season. I shall bring home plants, which never were seen by any eyes but those of the person who gave them to me. They are from the remotest deserts of Kamschatka. My own Lapland collection will be interesting.

"We go to Moscow in a few days. We have now the finest weather imaginable: neither wind nor clouds. And people say, 'What a warm day this is!' when we have nine degrees of cold of Celsius. But it must be added, we have had thirty; and Cripps drove me across the sea, when it was at twenty-seven, and our faces were full of spots, as fast as we rubbed them out. It is disagreeable weather here, if we do not have at least five degrees of cold; otherwise it snows. The sky at this instant is of the finest blue, without a cloud. The cold is much less felt than in England, being always dry. Ladies drive in sledges, without caps, powdered and curled and plumed, as for the court. The Emperor is now planting trees in the perspective. What next? Mr. Pug! Yesterday a carriage and four drove out of a yard, in the Million, and did not see the Emperor on horseback, who had just passed, but turned suddenly, and drove on. The Emperor sent back afterward his police-officers, and directed them to a wrong house. It was a merchant's, who never drove with four horses, neither had any such ever been in his yard. Nevertheless his coachman and footman were

ordered to be taken up, and sent to prison. The merchant protests against this flagrant injustice, and is answered, that if it was not his carriage he must find out whose it was: the servants mean time are detained in prison, for no crime whatever. Adieu!"

To his Mother.

"PETERSBURG, March 29th, 1800.

——"We are in daily expectation of leaving Petersburg. Particular circumstances, which I cannot now tell you, prevent our seeing the Hermitage, and the Houghton collection. We have waited week after week, on that account; and at last, I believe, must give it up. We set out for Moscow, either the 31st of this month, or April the 1st. If it is the latter, I can assure you, we shewed ourselves more of *April fools* in *coming*, than we shall do in *going*. Mum!

"We shall stay three weeks or a month at Moscow. About the first of May we go to Vienna, by the way of Kiow, passing the Ukraine, and through that part of Russia which once belonged to Turkey. Arriving at Lemburg, we shall bear towards the south-west, and crossing the Carpathian mountains, traverse Hungary, to Presburg, and thence leave it for Vienna. This journey will

employ us three weeks. We shall end the month of June at Vienna. From Vienna we go to Dresden, and Berlin, and thence to Hamburg; where I hope to arrive, time enough to see you before the middle of, or, at farthest, the end of August. This plan is determined, and you may depend upon our adhering to it. We shall not go into Italy, for I perceive it will detain us too long; and if Cripps does not particularly wish it, there is nothing in Italy, which will be new to me.

"I am in perfect health. The time we have spent here, quietly, has reposed and tranquillized both mind and body; and I am armed to encounter new exertions, with health and strength. Excepting the pictures at the Hermitage, I have seen every thing in Petersburg. Arthur Paget is sent Ambassador to Naples. Think what an advantage it would have been to me, if I had gone there, with such a friend at the head of affairs.—

"I cannot resist sending my sister some seed in a small packet, which she will laugh at, but she knows not how much I value it. I cannot get home in time to sow it; but she must get it sown with great care, in the garden, or in pots. It is the scarcest plant in the world. I found it in Lapland—a sort of pink, and its name, according to Linnæus, the Dianthus Superbus.——I believe it must be sown the day it arrives. It is found in the forests and meadows of Lapland, and two

hundred miles within the arctic circle. You will observe, therefore, a plant which has been accustomed to the frigid zone, wants very little nursing at Uckfield.

"I have been introduced to the Abbé Edgeworth (who attended the King of France in his last moments) by the Ambassador from Louis the Eighteenth. Dumourier is also here: I have dined in his company several times. When I get home I will shew you profiles of both of them.—

"We had yesterday a degree of cold, which will make you shiver to read. What think you of twenty degrees below freezing, on the 28th of March? Every thing is still buried in snow. We drive always in sledges, and are to go to Moscow in the same way. The streets, the tops of houses, and every object that one sees, are covered with snow, which almost blinds one with a constant glare, as it never thaws, not even for a moment."

To the Rev. William Otter.

"Moscow, April, 25th, 1800.

——"You are eager to learn something of this singular city; and I feel happy in giving you that knowledge; because, from our long intimacy, I can make objects familiar to your eyes, which another person might not render visible.

There is nothing more extraordinary in this country than the transition of the seasons. We have no spring. Winter vanished, and summer is! This is not the work of a week, or a day, but of one instant; and the manner of it exceeds belief. We came from Petersburg to this place, *en traineau*. The next day, the snow was gone. April the 8th, at noon, the snow beat in at our carriage windows. The same evening, arriving at Moscow, we had difficulty in being dragged through the mud to our inn. The next morning, the streets were bare, all carriages on wheels, the windows thrown open, the balconies filled with spectators, and for several days past, the streets have been dusty, and we have, in the shade, twenty-three degrees of heat of Celsius' thermometer.

"Fortune loves chance, and by one of those chances, we arrived here at the season of the whole year in which Moscow is most interesting to strangers. Moscow is in every thing extraordinary—in disappointing your expectations, and in surpassing them—exciting wonder and derision—pleasure and regret. We are now in the midst of the Pâques; which is here celebrated with a pomp and festivity, unknown to the rest of Europe. The most splendid pageants of Rome, do not equal the grandeur and costliness of the church ceremonies; neither can Venice, in the midst of her carnival, rival in debauchery, and parade,

and licentiousness, and relaxation, what is now passing in Moscow.

"I want to conduct you with me to the gates of the town, and thence through the streets. You see its numerous spires glittering with gold, amidst domes, and painted palaces, in the midst of an open plain, for several versts before you reach it. Having passed the gates, you look about, and wonder what is become of the town, or where you are, and are ready to ask, 'When shall we get to Moscow?' They will tell you, 'This is Moscow!' and you see nothing but wide and scattered suburbs, huts, and pig-styes, and brick-walls, and churches, and dunghills, and timber-yards, and warehouses, and the refuse of materials sufficient to supply an empire, with miserable towns and miserable villages. One might imagine that every town of Europe and Asia had sent a building, by way of representative, to Moscow. You see deputies from all countries holding congress. Timber huts from the north of the Gulf of Bothnia, plastered palaces from Stockholm and Copenhagen (not white-washed since their arrival), painted walls from the Tirol, mosques from Constantinople, Tartar temples, pagodas, and pavilions from Pekin, cabarets from Spain, dungeons, prisons, and public offices from France, ruins and fragments of architecture from Rome, terraces from Naples, and warehouses from Wapping.

"Then you hear accounts of its immense population; and wander through deserted streets. Passing suddenly towards the quarter where the shops are situated, you would think you could walk upon the heads of thousands. The daily throng is there so immense, that unable to squeeze a passage through it you ask, 'What has convened such a multitude?' and are told 'It is always so!' Such a variety of dresses—Greeks, Turks, Tartars, Cossacks, Muscovites, English, French, Italians, Germans, Poles, &c.

"We are in a Russian inn. The next room to ours is filled by the ambassadors from Persia. Beyond these lodge a party of Kirghicians, a people yet unknown. Beyond those, a party of Bucharians, and all of them are ambassadors, sent from their respective districts, to treat of commerce, peace, and war, at Petersburg. The Kirghicians and Bucharians I keep at arm's length; but our good old friend the Persian visits us, and we visit him. His name is Orazai, and I am so great a favourite with him, that he admits me to be present at his devotions, and I see him stand for hours on a carpet, with his face to Mecca, in silent meditation. It is then, he says, he holds intellectual converse with Mahomet. Yesterday he gave me a pair of Persian slippers as a memorial; and I gave him a knife to shave his head with.

"We went at midnight to the cathedral to be present at the ceremony of the resurrection. About two o'clock in the morning the Archbishop, and all his bishops and priests, in habits of embroidered satin, covered with gold and silver, and precious stones, bear their consecrated candles to look in the holy sepulchre, and finding that Jesus was risen, announce to the people with a loud voice, 'Xpucmocb, bockpecb?' that is to say, 'Christ is risen!' and at the delivery of those important words, the signal is given, for eating flesh, feasting, drinking, and dancing. To be drunk the whole of Easter week, is as much a religious observance, as to abstain from flesh in Lent, and the Russians are very punctual in religious observances.

"Of course, you saw at Petersburg the Russian priests, in their long black beards, and with their hair flowing in long ringlets, without powder, or quite in straight locks, over their rich robes and shoulders. No figure can be more respectable than a Russian priest. I look at them, and fancy I behold Moses or Aaron, or one of the high-priests of old, holy men, standing by the tabernacle of the congregation, in fine raiments, the workmanship of 'Bezaleel, the son of Uri, the son of Hur, of the tribe of Judah.'

"I send you the portrait of the Archbishop of Moscow, well aware, at the same time, that the

resemblance will not inspire in your mind the reverence I entertain for the original.

(Here he gives his portrait.)

"The 'Club des Nobles' permit us to have tickets for their balls and masquerades, which many travellers have found it difficult to obtain, because the laws of their society exclude all persons who are by birth plebeian.

"I wish I could give you any account of their balls, which might enable you to form an idea of their great magnificence. I assure you, I have seen nothing to equal it in Europe. The beauty of the women of Moscow, is beyond all imagination. To adorn this beauty, no expense is spared. The dresses of both men and women are to the highest degree sumptuous. A whole fortune is here seen lavished upon a single dress. And then so much taste is used in the display of it, that I would have the women of Paris come to Moscow, to see their own fashions exhibited to the greatest advantage. A person who is not richly dressed, is hardly thought fit to go into company, and we are obliged to appear in full uniform from morning to night. We must therefore set up a new suit at Constantinople.

"Apropos! I have not told you our plans for the rest of our tour. We have made every prepa-

ration to go to Turkey, by the way of the Black Sea. I think we shall not go to Astrachan, though much recommended to us, because the passage from thence to the Black Sea, over Mount Caucasus, is difficult, and requires time. But we shall go two days' journey from Moscow, and embark on the Dnieper, passing through Kiow to Cherson, and Oczacow; from thence to Perecop, and through the Crimea to Sebastopole, where Professor Pallas resides, and to whom we have a letter. From thence we cross the Black Sea to Constantinople; and from thence, through Bulgaria, by Belgrade, and through Hungary to Vienna. This we shall certainly attempt to do; the only alteration may be in the beginning of the journey, as many wish to persuade us to go down the Don, to the capital of the Don Cossacks, and from thence to Taganrok, on the sea of Azov, before we begin the tour of the Crimea, and this last is perhaps the most probable. At all events the Black Sea, the Crimea, and Constantinople, are our objects now.

"Davy lamented that I should waste the moments of enterprise, among the forests of Lapland; little thinking I should travel by the Aurora Borealis to the plains of Troy. But as its beams electric have shone so bright, I may find my way there, before the darkness of death intercepts my view. He wished me to see Greece; how sur-

prised he will be to receive a letter dated from Athens, from a man who set out for the Arctic circle. It is a pantomime prank, in a man who one minute flies out at the sky-light, and the next pops his head through the trap-door of the cellar.

"The Persian Ambassador gives me a cordial invitation to the town of Terki, on the western shore of the Caspian. He writes me notes in Persian, and sends his Cossack interpreter to translate them for me. Some of my visiting cards, engraved in Bond-street will be found in his palace in Persia. What a transition! 'Not at all!' says he, 'we could be there in a few days.' Heavens!' what a fever he puts me in, when he talks of such a journey, as we do of going from Cambridge to Carlisle! The rest of the globe is but a desert. Africa! America! what are they? Asia, excepting China, is a monotonous waste. The vast regions of east and west Tartary, will not recompense the difficulty of exploring them. As for the north of Asia, the Kamschatkans, the Samoides, the Ostiacs, are mere Laplanders, which, once seen, are known for ever. But let us not leave an acre of Europe untraversed. It is an easy work, and its completion will make us acquainted with almost all the productions of the earth. By going from North Cape to the mouth of the Persian Gulf, we become acquainted with all climates, frigid, temperate, and torrid. Plants in similar

latitudes are the same; and there is little of the animal, or mineral kingdom, which such an expedition would not offer to our eyes. We should see all that is instructive, and worth research. The rest remains for generations who may appear when the memory of European nations is swept away. For how small a portion of the globe is yet civilized; if any part of it can be said to be truly so!"

To his Mother.

"Moscow, May 24th, 1800.

"I received about a fortnight ago letters from my sister and brother; precious and welcome messengers, though filled with the most dreadful alarms, respecting the health of my beloved mother. Your hand-writing I have not seen so long, that painful presages seem to tell me, I shall never see it again. Write to me, my mother, if it is but half a line, and tell me, without disguise, how you feel yourself to be.

"The history of all your London excursions, of your new fish-ponds and promenades, of your papered parlour, and hermitages, is all a romance to me—a pantomime, in which with a whew! all the scenery changes.

"In this country I hardly know what I dare write. We have been detained here almost as

prisoners of war, and though we leave this place in two or three days, you would hardly suppose we should have gone to Constantinople. The fact is, we follow the advice of our excellent ambassador, Lord Whitworth.——As the distance is much the same from Moscow to Constantinople, or from Moscow to Vienna, we go first to Constantinople, having with us letters to all the great people there, and then we return through Hungary to Vienna. My mother, who knows what I suffered by the loss of my journey to Egypt, will partake with me, in the joy and satisfaction I must feel in the prospect of visiting, and with so much ease, the plains of Troy.

"Our return to England will not be retarded. We shall get home in the summer. Indeed it is absolutely necessary we should be in the North of Europe, to be ready for the Hamburgh passage before the Elbe is frozen.

"In the Crimea we shall see Professor Pallas, so well known for his travels in Siberia, and Captain Billings, who discovered a great part of the north-west coast of America. For an account of this astonishing city, I must refer you to my journal. It is impossible to begin such subjects upon a sheet of letter paper. Cripps has been very much noticed both in Petersburg and Moscow. The grandeur and extravagance of the nobles and

inhabitants exceed all I have seen before. Nothing is thought elegant or genteel here, but in proportion to the money it has cost. We are obliged to be in full dress from morning till night, and even our uniforms would not be allowed to admit us into company, if we were not travellers. You would see here a nobleman on horseback, among a thousand others, whose saddle cloth is covered with diamonds, and his saddle of the richest embroidery: his stirrups of solid gold, set with diamonds and large pearls. A merchant's wife has sometimes six and seven thousand pounds sterling of pearls and diamonds on her head and in her dress. In a common fair, among the mob, you will see the wife of a shopkeeper with lace, such as our Royal Family may wear on a birth-day. At the 'Club des Nobles,' where only persons of noble birth are admitted, the number present, the first night we were there, amounted to two thousand; whose dresses were all according to the description I have given. They suffer us to enter as 'Milords Anglois,' a name always given to Englishmen abroad.

"We are both in very good health, and only beseech you all, whatever length of time may elapse without your hearing from us, never to think it a reason for anxiety or alarm. Letters, especially here, are often intercepted or lost. Through

the countries where we now go, there can be no post; therefore it is not possible you should hear from us soon."

To the Rev. William Otter.

"TULA, June 2d, 1800.

"Now is the time to write to you, though my journal lies neglected, and even my mother expects a letter from me, and many things besides. But I know you will send my letter to her, and then it will do as well; for I have much to say to you.

"We have left Moscow at last, and are upon our sublime expedition; which, to tell you the truth, I feared we should never undertake; for reasons I dare not now give, but you will guess. Even when I wrote my last to you, it was a kind of melancholy satisfaction to tell you, that it would not be our fault if we did not go. We had resolved on the plan. It is now begun; and all looks fair and bright before us. My health is good; and our friends have supplied us with a trunkfull of letters to Governors, and Khans, and Cossacks, and Tartars. Do for God's sake imagine what I must feel in the prospect of treading the Plains of Troy! Tears of joy stream from my eyes while I write; and to crown all, it is no mad scheme of mine which I have persuaded Cripps to take. He de-

termined upon it, in consequence of the advice of Lord Whitworth. The servant who accompanied poor Tweddel upon the same expedition, goes with us; and I entertain sanguine hopes of being able to recover several manuscripts and drawings belonging to him, which were scattered upon his death. This servant is a Turk; who, besides his native tongue, speaks Russian, Sclavonic, Greek, Italian, French, and has a smattering of German.

"Now pray attend to my plan, because I should be unhappy, if you thought I could have done better; and I assure you, it is not the result of a moment's thought, but has been changed half a dozen times.

"I at first wished to see Casan, and a little of Siberia; but after our residence in Moscow, finding that every thing for at least 3,000 wersts eastward, was merely Russian, without even a change of costume or language, through a flat, uninteresting country, I gave up my journey to Siberia. Motteux, nevertheless, is gone to Tobolsky; the same who was in Lapland and Norway.

"Now, we intend to leave the common track to the Crimea; because I hate wearing other people's shoes, and it has been made by Lady Craven and others. Our journey will be from this place to Waranetz; and from thence we cross the great deserts, inhabited in parts by wandering Kalmucks, till we reach the country of the Don Cos-

sacks. When we arrive at the most eastern inclination of the Don, we shall cross over to Zaritzin, on the mighty Volga, and perhaps visit Astrachan, on the Caspian Sea, though there is nothing very interesting there. It is a people of yesterday—English merchants, Italians, Russians, and Cossacks. Then we regain the Don, and sail down that river to Tscherchaski, the capital of the Cossacks of the Don, to whose protection we are recommended by letters from high and mighty Cossacks in Moscow. Then we visit Circassia, and other parts of Asia; perhaps collecting plants on Mount Caucasus. Then we go to Taganrok, on the sea of Azov, where Peter the First wished to found the capital of Russia before he built Petersburg; and to the town of Azov; and somewhere in this neighbourhood I hope to find some traces of the ancient Tanau. Then we traverse the Crimea; having letters to Pallas and others. Then Cherson, Oczacow, and Constantinople; and I need not tell you where we shall go, when we get there. One thing is certain, that we shall not go to Athens; and strange as this may appear, I think you will agree with me, that enough have been there; at least of such travellers as we are: for to visit Athens to any purpose, there should be another Tweddel, with draughtsmen, and modellers, and so on; and to visit merely Athens, without the rest of Greece, would be acting like

man, who came to Moscow to see the great bell, satisfied his curiosity, and returned immediately. As the situation of the plain of Troy will be so near us, we shall certainly go there, and then return through Bessarabia and Hungary to Vienna; visiting Belgrade and many other interesting places. We hope to reach England before the passage from Hamburg is frozen up.

"Our collection of the minerals of Siberia, is very valuable. We have about eight hundred specimens. For botany, we are just beginning the year. This day we found a plant, which I believe was never described: and when you see what Linnæus said of Muscovy in his Bibliotheca Botanica, it will appear probable.

To the same.

"Woronetz, June 9, 1800.

"What would I now give to have you near me, to point with your finger, and say which way we should go, or to go with us! You would find me here under the greatest uncertainty, every road is so interesting, that I know not which way to turn. I came here in hopes of water carriage to Tscherchaski, though I knew it would require more time, on the fine river Don, the ancient Tanais, now possessed by Calmuc Tartars, and the Don Cos-

sacks. But it is one thousand miles by water to the Palus Mæotis, and only five hundred by land. Add to this, a little reported danger from the deserts, as well as the river, and a necessity of providing arms; but, as I have always found such accounts mere bugbears, I suppose they are without foundation. Our carriage wants a little saving by water, if we can manage it. Now you see, if we had gone to Kiow, we should have seen curious catacombs, which are nothing new, malgré their antiquity; but we could have sailed by water to Cherson and Oczacow, down the Dnieper. What is there to be seen there? All the world knows! Then to have gone by Perecop, through the isthmus to Sebastopole; all that is very fine; because it is pretty to enter a peninsula by its isthmus. But then it is very little farther, to go by the capital of the Don Cossacks, to Taganrok, Azov, Kaffa, and the capital of the Crimea to Sebastopole. From Tscherchaski, the first of these, we can visit part of Circassia, and perhaps mount Caucasus. If we go by water, we can cross over, from the Don, to Zaritzin, on the Volga; and visit Astrachan. Taganrok is where Peter I. wished to establish the capital of the Russian empire. At this place, Woronetz, he launched his first ship of war, when he intended to be master of the Black Sea: and his house, and his machinery, are still preserved. Here are also the tombs of ancient Tartars, and we

sleep on a living sepulchre of their conquerors—a party of jolly Russians, with their heads shaved, imprisoned in dens, below our bed-rooms, for murder, theft, and other amusements—so that nightly, as I press my pillow, the clanking of chains, and the horrid laughter of mad misery, gives me a gentle hint to feel for others what they seem to regard with apathy themselves. Azov, in Asia, was once of great importance. I hope to find, in its neighbourhood, something of the ancient Tanais; but, to tell you the truth, I might have been better equipped for such a journey; having neither books, nor maps; and trusting to a very addled and empty brain, for all that is to guide us. After Azov, we shall travel, if we take this route, along the north-west coast of the Palus Mæotis, till we enter the Crimea; and this will not be by the isthmus, but by a passage you will find more apropos. We then go to Kaffa, the ancient Theodosia; from thence to Karas-ou-bazar, capital of the Crimea, with a letter of recommendation to the governor, from the prime minister in Petersburg. Then to Sebastopole, with a letter to Pallas. Thus you see, we shall lose Cherson, and Oczacow; because from Sebastopole, we sail for Constantinople, but I know not how to estimate a loss, which seems to me a gain. Tweddel, as his servant informs us, opened some tombs in the neighbourhood of Nikolaif, beyond Cherson and Oczacow; and found

there Greek vases, which he never after suffered to be out of his reach. What a loss was this man! I am sure from what I hear of him, and the manner in which he passed his time, that he made discoveries of the utmost importance to history, which are lost for ever. We like very much his servant, and he gives us daily anecdotes of his late master; which are not merely amusing, but instructive. What Tweddel did in such a journey, others may rationally wish to do. How few such men exist among us! enlightened by science, and flushed by enterprise; scaling the precipices of knowledge and glory. To travel with one of his disposition and talents, I would black his shoes in the morning, and fry his fish at night, contented only to tread in his footsteps, and profit by his information.

"Shall we ever cease talking when we meet? What have I not to ask of you, respecting the nations which surround me! These wonderful Tartars! who are they? and where did they start from?—a race of wild bipeds, overthrowing empires and establishments, planting a Calmuc upon the throne of China, and the schools of Athens in Samarcand! They come riding on their dromedaries through the south of Russia; and if you ask them a question, respecting their great Tamerlane, they stare in your face, and pass on.

"Cripps found a plant in a woodthe day before yesterday, the most beautiful I ever saw. We

have disputed about it. He will insist, that he found it for you in Denmark, and that you called it the Myosotis Lappula. But it is not of that class. It is Hexandria Monogynia, fol. alternis amplexicaulibus; caule tereti, pedunculis axillaribus multifloris; and, therefore, can be no other than Convallaria multiflora. If the flowers, starting from the foot stalk, between the leaf and the stem, had been solitary, and the stem a little more compressed, I should have called it Convallaria Polygonatum; but never Myosotis Lappula; therefore, it must be some mistake of his. I will shew it you, well preserved, when I get home.

"All that we now feel anxious about, is the time we have to spare. Were it not for the uncertainty of the passage by Hamburg, it should go hard with us, but we would visit the capital of Persia, Ispahan. As it is, we must be contented to place our feet in Asia, and return. We shall certainly visit the Plains of Troy, get a view of Mount Athos, perhaps visit Tenedos, and return through Belgrade, by the Danube, to Vienna. We are now full of the idea of sailing down the Don, with Europe on our right hand, and Asia on our left. Whatever route we finally decide upon, you will know by the next letter, as it must be dated from some place more decisive, in that respect, than the town of Woronetz.

"We are drinking the wine of the Don, and

making very copious libations to the health of every timber of Jesus College. Cripps promises to send some to Jesus Combination Room; if we can prevail on the Cossacks to sell it, and send it to Constantinople. But they make little more than they consume themselves, and are not willing to part with it. I can assure you it laughs Burgundy to scorn.

"Let my mother know that you have heard from me. I shall write to Uckfield immediately; but my letters there, are hardly ever answered. And, in this respect, I have no reason to be very grateful to you, for I cannot get a line. Pray do not forget to remember me to Mr. Tyrwhit, and include Cripps in the same memento. Tell me in a letter to Vienna, 'aux soins de Messrs. Fries and Co.' what we can bring him home, that will give him any pleasure. You know already how much we both esteem that man. He always calls my father to my mind. As for Malthus, tell him he is not worth writing to; he is wrapped up in other matters, and obliterating all the traces of his pilgrimage. Will he be ready to start again next spring? Ask him that! I put him to the test! He has a great deal 'trop de plomb, pour un tourist.'

"A poor woman was taken out of the river this evening, who had been bathing, and fell beyond her depth. She had never sunk, and was not motionless, when they laid her on the shore. Yet

not a single Russian, for any price, would assist in restoring her to life. A police officer took down the circumstances of her catastrophe in writing, and she was left to expire upon the sand; surrounded by hundreds of spectators.

"We are now in the latitude of London; and behold every where English plants. What a change, from the gelid regions we have inhabited! The heat is here so great, that I think it must be cooler in England. The thermometer of Celsius, this day, at noon, a northern aspect, in the shade, ran to twenty-nine degrees above freezing. This equals twenty-four of Reaumur, and as we have not Fahrenheit's scale, you may estimate it yourself.

"June 10th.—We have decided at last, and shall go by land. I find vessels are sometimes three months in passing down the Don; whereas the journey by land may be performed in four days. But we went so far as to hire boats, and made every preparation; having decided for water two hours ago.

"This place becomes a very large town, and increases daily. I wish I could send you a view of it. When we arrive at Tscherchaski, I shall take a walk into Asia; and the moment I set my foot there, I shall endeavour to amass for you, the choicest blossoms of Circassia; that is to say, those which are portable. Good bye! my dear

friend! I cannot add a word more, for my mind is on fire with enterprise; and as oriental, and as extravagant in its ideas, as the Tales of the Genii! Now for an explosion!

ODE TO ENTERPRISE.

I.

On lofty mountains roaming,
O'er bleak perennial snow,
Where cataracts are foaming,
And raging north-winds blow;
Where hungry wolves are prowling,
And famish'd eagles cry;
Where tempests loud are howling,
And lowering vapours fly:

II.

There, at the peep of morning,
Bedeck'd with dewy tears,
Wild weeds her brows adorning,
Bold ENTERPRISE appears:
While keen-eye'd EXPECTATION
Still points to objects new,
See panting EMULATION,
Her fleeting steps pursue!

III.

List, list, celestial virgin!
And, oh! the vow record!
From groveling cares emerging,
I pledge this solemn word:—
By deserts, fields, or fountains,
While health, while life remains,
O'er *Lapland's* icy mountains,
O'er *Afric's* burning plains;

IV.

Or, 'midst the darksome wonders
Which earth's vast caves conceal,
Where subterraneous thunders
The miner's path reveal;
Where, bright in matchless lustre,
The lithal flowers* unfold,
And midst the beauteous cluster,
Beams efflorescent gold;

V.

In ev'ry varied station,
Whate'er my fate may be,
My hope, my exultation,
Is still, to follow thee!—
When age, with sickness blended,
Shall check the gay career,
And death, though long suspended,
Begins to hover near—

VI.

Then oft, in visions fleeting,
May thy fair form be nigh,
And still thy votary greeting
Receive his parting sigh:
And tell a joyful story,
Of some new world to come,
Where kindred souls, in glory,
May call the wanderer home."

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* "*Crystals*, the blossoms of the *mineral* world; disclosing the nature and properties of *stones*, as those of vegetables are made known by their flowers."

To the same.

"TAGANROK, on the Sea of Azov,
June 31, 1800.

"Who would have thought, that on the very day twelvemonth, in which we were bathing in the Wener Lake, one of us would bathe in the ancient Tanais? On that very day I entered Tscherchaski, the capital of the Cossacks of the Don, and threw myself into the river to solemnize the anniversary. There, swimming between Europe and Asia, I thought of you, of Uckfield, of England, of all that is dear. What a tract have we traversed, in a single year! the whole extent of Europe, from its remotest angle at the pole, to the burning deserts of the Calmucs and Cossacks; from the Icy Sea to the Palus Mæotis! and the whole diameter of the Russian empire, from the frontiers of Finland, and the Baltic, to its utmost limits in the south.

"What have we been taught by all this? One important fact—that there does not exist in Europe, a settled *savage* people. It is ignorance to talk of dangers from this or that nation; all Europe is civilized, that is to say, humane. I do not include the Nogaik Tartar, whom we have here, nor the Calmuc, because they are wandering tribes like the Segankas or gipsies, and the roving Lap-

landers: yet even these are not less humane, though more wild, than our smugglers, or the Irish peasants.

I should like to know what would have been the result, if a party of Collegians, bound for Tscherchaski, had heard what they told us at Moscow, of the danger of traversing the deserts of the Don Cossacks. Post-masters, officers, nobles, persons pretending to possess accurate information, filled our ears with stuff. What do you think of Cripps, who could say to me, 'I præ, sequar!' Is he not a lad of enterprise, and fit to see *fenominons?* When we got among the Cossacks, and found them the best fellows upon earth; we asked, Where are the banditti? They referred us to the Calmucs. Presently, came along the Calmucs mounted on their camels, and again we asked, Where are the banditti? They referred us to the Nogaik Tartars. Now, we have visited them, and they answer the same questions, by a reference to the Circassians and the Kuban Tartars. As we are determined to hunt down all these bugbears, that future travellers may sleep in peace, and not move from place to place with armed convoys, as we have done, we shall again cross the sea of Azov, and travel through part of Asia to the south of the Crimea, and cross the Taman straits to Kaffa, the ancient Theodosia, visiting Kuban, the capital of the Zaporochi, on the river of that name, which falls from the

highest of the mountains of Caucasus, into the sea of Azov.

"Our European dresses are laid aside, and we have adapted ourselves, as much as we can, to the burning climate of these regions; for though in a latitude little south of Cornwall, the heat is intolerable; and the musquitoes almost as bad as in Lapland. I believe I must tell you a secret; that, with all my dashing and slashing, I fear this will be my last journey. My health has failed through the whole of it, and, *peu-à-peu*, I seem to be *going out* like a farthing candle, that has enlightened no one. The fire of enterprise burns within me, and keeps me moving; but my body is a wet and withered weed, that turns all its flame to smoke. It is with the greatest difficulty I can exert myself to write. Thank God, as yet I have no blank to lament. Plants, Minerals, Antiquities, Statistics, Geography, Customs, Insects, Animals, Climates; every thing I could observe and preserve I have done; but it is with labour and pain of body and mind. Without such a mild, active, and attentive companion as Cripps, I should never have persevered.

"My letter to my mother has been very short. As she knows I write to you, if they ask to see this, tear off, or blot out this part, and say it was on a subject of ancient history, not fit for them to see.

"Do tell Malthus, that we have now got more than one real porcupine. What will he say to hear that we travel in a carriage with two subterranean bears, that are as tame as our dog; and that eat any thing we give them—one of our loaves, or one of our shoes. It is really true! How I should like to see Malthus laugh when he hears this. They destroy as much of our linen as Mrs. Webb would do in a given time. But as they are animals totally unknown in Europe, not having ever been named or described by any naturalist, I hope I shall succeed in bringing a pair of them, male and female, to England. They grow to about the size of a large cat, or lap-dog. We lost one out of the boat the other day, in coming from Azov to this place. We sailed down the Don, with Europe on our right hand, and Asia on our left, to Azov, and from thence into the sea to this place.

"I must now tell you of a discovery I have made, which you will deem of more importance, and will amuse your sages at Cambridge. The city of Tanais never was stationed where Azov is. I have found the cause of the name Tanais, which the Greeks gave to the Don. In crossing the deserts I came to a river, which the inhabitants of the country called Danaets, and was surprised to find, that, with this suspicious appellation, it fell into the Don. Something was gained; but it falls into the Don at one hundred and forty versts

from its embouchure, therefore the Greeks owed nothing to it. But, behold! and remarkable to relate, in sailing down the Don, a northern division of it turning off into the sea of Azov, towards the coast of Nogaik Tartary, again bears the name of Danaets, and is called Dead Danaets, to distinguish it from the former part, which is called Northern Danaets. The people pretend that the waters of the Danaets here separate from the Don, and fall into the sea by themselves; whereas, in fact, it is only one of the mouths of the Don, but has been called Danaets from time immemorial.

"Now it is all plain; for the Greeks navigating the sea of Azov from the Crimea, and according to the custom of those times, as well as the present day, keeping always close to the shore, passed along the coast of Nogaik Tartary, and arrived at the northern embouchure of the Don, which they found named Danaets. Of course, however far they proceeded up the river, they always gave it the same name, and it is not probable they went far up. But the Greeks, like almost all the nations of Europe, changing the D into T, which they ever did, obtained the name Tanaets, or Tanais, for I do not suppose the sailors of that day were more particular in their orthography than those of the present; especially in writing a mere sound, uttered by savages. It would puzzle at this moment an English captain, who heard the

Tartars, or Cossacks, name the river, to write down the word, and he might make it Danaets, Tanaets, or Tanais, just as he fancied it sounded. And from whom have we the pronunciation?—from Cossacks and Tartars! both of whom are new-comers into the country where the river is situated, and may have corrupted the purity of the word, making Danaets of Danais. It is worth remark that the modern Greeks have no such letter as D; they pronounce it *Th*, and call Delta, *Thelta*.

"Tanais, if ever it existed, must be discovered at the northern mouth of the Don, and not at Azov, where there is not the slightest indication of it. I go to-morrow to Sinofka, a village situated there, to see what farther may be made known.

"Cripps has been asleep these three hours. He begged I would say something of his remembrance to you. Good night! God bless you! I will write again from Constantinople, or the Crimea."

To his Mother.

"Taganrok, on the Sea of Azov,
June 31, 1800.

"In one of those burning nights, which this climate affords, and when time is more precious than you can imagine, I hasten to write a few lines

to you, to say we are in very excellent health, and though we have not arrived so soon as we intended in England, we are pressing forward with all speed. We pass from this place through part of Asia to the south of the Crimea, and from thence by Constantinople to Vienna. When you consider what we have done in one year, you will think I am inaccurate, if I promise to be with you in the autumn.

"Another motive for writing is, that I know you will be happy in my writing a letter to Otter, as I am now in the land of all sorts of antiquities. But I cannot fear you should think me deficient in my duty, or that I wrote to him when I ought to write to you. The fact is, my letter, and the only one I have to write, must necessarily be filled with subjects of ancient history and geography, which would fatigue more than amuse you, and if ever you are curious to see it, he will send it to you.

"July the 1st, 1800.—Contrary wind enables me to add a few words. I shall get a shawl or two at Constantinople, but what I wish most, is to get something for you, and I know you will not tell me what to bring.

"We are now on the sea of Azov, and have a fine prospect of it at this moment from our windows. I have made some curious discoveries, respecting the ancient geography of these countries,

which I cannot now relate. We collect every thing; Plants, Minerals, Antiquities, Insects, Animals, Customs, &c. We have two animals with us living, that are unknown in Europe. They are called subterranean bears.

"In this place we have eleven different nations. Greeks, Armenians, Turks, Cossacks, Calmucs, Tartars, French, Germans, Poles, Russians, Italians, besides us English, who complete the dozen. And they are all in their different dresses. What do you think of a Calmuc? This gentleman presented me yesterday their sacred pavilion of the written law. Look at him! and respect him! he is my particular friend.

(Here he gives a sketch of a Calmuc.)

"He has fish-bones in his ears, and is going to drink your health in brandy, which his wife made from mares'-milk; and to-morrow they mount their camels to take part of our baggage to Azov. I have put his country-seat at a distance, lest any of the ladies coming out from their toilet, should alarm you. His favourite horse died a few weeks ago of the botts; and as he now begins to be in a fragrant and yielding state, he invites us to dine upon one of his haunches. Really, my dear mother, you should come and pass a week in one of these fine open deserts, with the Calmucs. Their diet and mode of life would be so new and amusing to

you. And what is better than change of air and diet? To move from the South Downs, to the putrid marches of the Don, and from Sussex mutton to raw horse-flesh!

"We have now in one year traversed the whole of Europe, from the Icy to the Black Sea. Since we left Petersburg, we have crossed entirely the vast empire of all the Russias, from the Gulf of Finland to the sea of Azov, and rolled over two thousand of our English miles, without starting a bolt from the carriage. Huzza! my dear mother! look! look yonder! what a glorious sight!—the sea of Azov, and the fleets of Turkish merchants; the ships of Tarshish, and the Isles! The rich vineyards of the Crimea, the wide deserts of the Don, the long and loitering caravans, slowly moving in whirlwinds of dust, the ancient cities of Tanais and Theodosia, the camps of the Calmucs, and the tombs of the Tartars! Huzza! here we go again! The snow-clad mountains of Caucasus, the fair damsels of Circassia, the Armenian colonies, the roving Cossacks, the princes of Persia, and the ports of the Argonauts.

"These are fine things to see; but there is one thing more delightful to behold, which for a long time has not comforted my weary eyes; and that is, the nice, clever, neat, and interesting handwriting of my dear mother. At Vienna I shall see it, and not before. And that will be in the month

of August, or beginning of September. Keep writing to that place, 'aux soins de Messrs. Fries et Co.:' every line will be worth a million in my estimation, and I shall have such a comfortable packet to open, as I had at Christiania. Tell me every little trifling thing, when you brewed, and when you baked; how many cakes Mrs. Weller carried to the oven, and how many she brought back. Does my vine tree grow? Or is it dried up, and withered like grass?"——

To the Rev. William Otter.

"JENIKALE, in the Crimea, July 12, 1800.

"We have just crossed the Cimmerian Bosphorus, from Asia. Fortunately I met with a copy of Pliny, at Taganrok, which, though an enormous folio, is our guide through these interesting scenes; and I had it in my hand the whole way. We are knee-deep in antiquities, and have broken our shins over moralizing marbles, that have held converse only with toads and lizards for ages, till our arrival. I never was so charmed with any travels, as with these. Can Greece be more interesting, than countries, in which her earliest colonies laid the foundations we are ransacking? We are lodged in the house of a Spartan. His wife, a native of Paros, decks our table with roses and honey. The

waves of the Bosphorus beat against his balcony. At this instant, I have before my eyes, such a range of historic territory, as would draw tears down the cheeks of apathy. Do you not see the little fleet of the Argonauts, creeping along close to the shore? the crews in canoes, surveying the objects round with the mixture of exultation, wonder, and curiosity, which we now feel? Did they steer by the European or Asiatic side? Who can tell us that now? It is of some consequence, and would determine many points. I feel reason to hope that I shall clear up, at least, a page in the doubtful annals of the historian. But what historian will enable us to account for the prodigious ruins, with which these shores are covered? Temples and theatres, that received the vows, and shook with the plaudits, of a refined people, in ages, respecting which the Grecian annals are full of obscurity and fable. Whence flowed the wealth, and where are the quarries, that supplied marble palaces, in the midst of deserts, where nature has afforded no materials for the architect? The isle of Taman is of sand and clay; and yet the ruins of the city of Phanagoria are greater than those of Cuma. God help us! we run to Italy to see the works of yesterday, and if we visit Greece, it is thought we attain the fountain's head. Why have not enlightened travellers passed to these regions, where the earth is paved with inscribed marbles, where history

might be raised from her tomb, and where the Scythians, more barbarous than their Anthropophagite forefathers, are burying the most precious records in the foundations of their fortresses? Would the Turks or Tartars were again masters of the land!

"I creep about like an owl in the sun, having no books: and were it not for Pliny, I should be quite blind. Oh that I had a few of those notes which lie useless, in my study. When I was going to Egypt and Greece with Lord Berwick, I collected all the information I could find, and it is now lying at College to light a pipe. How am I to determine the situation of Statoclia, or Cepi, of Hermonassa, or even Phanagoria, from Pliny? He does not even state on which side of the straits are the towns he mentions. These are all his words—'Oppida, in aditu Bosphori, primó Hermonassa, dein Cepi, mox Stratoclia, et Phanagoria, et pene desertum Apaturos; ultimoque in ostio Zimmerium quod antea Cerberion vocabatur.'

"Phanagoria is pretty well determined; and that being known, throws light upon the rest; I found myself Apaturos. Zimmerium, he elsewhere says, is beyond the straits, and I believe, on the isle of Taman. The soldiers in working the fortress at Phanagoria, found a small silver coin, and they gave it to me. It has a bull, with these letters above it, the rest being lost—ΦANA. On the other

side is a head, with a Phrygian bonnet. I copied some of the inscriptions on the marbles, and hope to bring home some of the marbles themselves, for our public library. Application is making for me to the governor of Crimea, to obtain a Greek tomb, of marble, which serves all this town as the basin of their public conduit, and the old women are meditating a punishment for me, in proposing to move off their washing-tub. It is such as Poussin and the most classic painters introduced in their pictures, with the simple, massive grandeur of the best ages of taste. It can be conveyed in a ship, though the weight is enormous; and what would be my satisfaction to see it obtain an asylum in our University, where, placed far from the reach of Scythians, or Tartars, it might inspire some enterprising mind to rescue from oblivion the rest of those inestimable relics, which are daily falling a sacrifice to time, and to ignorant barbarians.

"Since I wrote these last words, I have been called away by a message from the General of Engineers; and have the satisfaction to tell you, that no less than five marbles with inscriptions, &c. are now safe on board the Madonna Turliani, bound to Constantinople; from thence they will go to England, and to Cambridge. I hope soon to send another detachment after them. Of coins, I have obtained several, but as yet only one vase; and, though I suspected they might be found

here, I believe no antiquarian has yet thought he might refer his favourite oracles to so remote an origin.

"The southern coast of the Black Sea is one continued theatre of history. Ruins are seen the whole way from Constantinople to Trebisond, and even to Anapa. At Amasera they extend far into the sea, and columns which the waves have not had power to overthrow, are still regarded by the fishermen and mariners as works of magic. Here I converse with inhabitants from all the towns round the Euxine, and they are all of one story, respecting the important objects on its shores. Amasera is only three hundred miles from Constantinople, and there, at least, I hope to go. My dear fellow, I am so tired I can hardly see what I write, or else I have much to tell you. In my last letter I gasconaded a great deal about the refinement and civilization of Europe; but I have nothing of that character to give respecting modern Asia. That part of it we traversed was full of danger and désagrémens. We were also eaten up by mosquitoes, and obliged to be escorted by an armed cavalry of Cossacks, amounting to six, eight, and sometimes ten horsemen, with lances, pistols, sabres, &c. We penetrated into Circassia; but it was under cover of the cannon of Ekaterine-dara. When we first arrived on the Kuban river, the Tchernomorski and the Circassians were at war,

but we had the pleasure to attend the embassy of the princes of Circassia, who came from the mountains of Caucasus, with their bows and arrows, in armour, to swear the oath of peace with the Cossacks of the Black Sea, before the Pacha of Anapa. The savages of Otaheite are not wilder, and they are less ferocious, than the Circassians. Their beauty is justly praised. We saw several hundred, and the women, who were prisoners in the Cossack army, are the most beautiful perhaps in the world; that you may judge of the men, I send you a portrait of a Circassian; in his tunic of black sheep's wool, which they all wear.

(Here he gives a portrait hastily sketched with his pen, adding the neighbouring mountains.)

"We had a fine view of the mountains of Caucasus, and travelled within a few miles of them for many days, along the river Kuban. Mount Kellebores is visible at the distance of three hundred versts; his summit is covered with eternal snow. They are inaccessible on account of the bogs which surround their bases.

"Look at them! and tell me whether you wish for a plant from the plains below. Such a one I can give you. Among the Circassians the labours of the plough become a warlike occupation, and the sower goes to cast his grain, attended by his sabre, his fusil, and a horse that may outstrip the

winds in their course. Circassian girls sold on the banks of the Kuban, when we were there, for twenty-five roubles a piece. Parents offer their own children for sale. They sew a girdle of sheep's hides round the waists of their female infants, which is worked upon the skin, and left there for years, to give them an elegant shape. Many of them are sent to the Turkish seraglios. A Turkish merchant buys them as so many calves for the market, boys and girls. If they had taken us, we should have been carried into Persia for sale, and perhaps the only method to see the interior of their country would be to go a voluntary prisoner. One of their princes was amused, because we took off our caps out of respect to the Pacha, in his tent, and laughed very loud while he mimicked our bows, to him, no doubt, very ridiculous. Upwards of fifty princes came to the Kuban to treat for peace with the Tchernomorski.

"Our character of Asia, from the part of it we traversed, may be given in few words—bad air, bad water, bad food, bad climate, bad people.

"I have collected insects merely that we may omit nothing which any of our friends in England may think we ought to have noticed. Our hands and heads are quite full, and that both one and the other may repose a little, I shall now wish you good night. Cripps is uneasy for fear I should forget to add his remembrance. God bless you."

To his Mother.

"ACHMEDCHID, in the house of Professor Pallas, in the Crimea. August 15th, 1800.

"Now, you are saying, 'Well, at last, I have got a letter from Ned;' and what will it contain? only that he and his companion are well; and is that worth writing about, to the distance of 3000 miles?

"You must have heard of the celebrated Professor Pallas, who travelled all over Siberia, even to Kamschatka, by order of the late Empress; one of the greatest of the sçavans of Europe, who has published so much, and so well. It is with him we now live, till the vessel is ready to sail for Constantinople; and how can I express his kindness to me? He has all the tenderness of a father for us both; every thing in his house he makes our own. He received me worn down with fatigue, and ill of a tertian fever. Mrs. Pallas nursed me, and he cured me, and then loaded me with all sorts of presents, books, drawings, insects, plants, minerals, &c. The advantage of conversing with such a man is worth the whole journey from England, not considering the excellent qualities of his heart. Here we are quite in an elegant English house; and if you knew the comfort of lying down in a clean bed, after passing months without taking off

one's clothes, in deserts and among savages, you would know the comfort we feel. The vessel is at Kosloff, distant forty miles, and when we leave the Crimea, Mr. and Mrs. Pallas, and their daughter, who has been married since we were in the house, to a general officer, go with us to Kosloff; and will dine with us on board, the day we sail. They prepare all our provisions for the voyage.

"The Governor-general of the Crimea, as well as his deputy-general, Bouritzi, and prince Viazemskoi, commandant of the garrison and troops at Achtiar, have paid us the greatest attentions. We lament the necessity of expedition, or we should have liked very well to winter in the Crimea.

"We know nothing what you are all about at the other end of Europe; nor whether it is still war or peace. If it is peace, order my young vine to be trimmed and nailed over the kitchen window, and brew some strong beer, and tell Master Wood to use pump water; if it is war, inquire how poor old Truncheon does; and whether he has medicine enough to last till the French come and chop off his head; Dame Osborne, I suppose, continues the same dear, good creature, and never drinks; except 'a drap a' sumthin cumfitible, a' Sundays.'

"If you do not hear from me for months together, you must not be uneasy. It is impossible to say when a letter may go; and if one happens to be

lost on the long journey, there's a gap, at once, of three months.

"I should think, if I can pitch upon a nice, snug Persian carpet at Constantinople, warm from the Bagdat looms, about two inches thick, it would look very well under your feet in the parlour at Uckfield. 'Now, my dear Ned! don't go to bring home a thing big enough to cover all Uckfield.'

"We shall go straight home from Constantinople, which you will believe; because we can go no farther: the French being in Egypt, and rebellions and plagues in Asia Minor and Syria. As for Africa and the Cape of Good Hope, we have so many visits to pay, that our friends there must excuse our calling this time.

"I had like to have forgotten a principal thing. Perhaps by this time you have received a great case from London containing fruit in glass jars, &c. Whenever it arrives, pray take the greatest care of it. We sent it to you because we feared it would ferment and be spoiled. It contains two sorts of Lapland strawberries, boiled in sugar. But as they were done by different people, some contain more sugar than others; boil them all over again with fresh sugar, and do whatever you can to save them; but do not mix the two sorts together, nor the bad with the good. It is a fruit which was never seen in England. You will find

two small bottles containing the plant, and its fruit, in spirits of wine; let them be kept safe, as they are. I know you are famous in preserving such things, and therefore having great hopes from your care, we ordered them to be sent to you."

To the Rev. William Otter.

"ACHMEDCHID, capital of the Crimea,
August 27th, 1800.

"Now I am a little more upon my legs, and can write you a long letter full of interesting matter about this remarkable peninsula. I told you I arrived, like an owl in the sun, but growing accustomed to his beams, I blink less, and see more. I had no books, and trod classic ground, without knowing where I stood. You know I had a letter to Professor Pallas, the great luminary of the Scythians; and to his benevolence, I am indebted for every comfort I enjoy here, and perhaps for my life. In the midst of weakness and fatigue, I caught a vile tertian fever, the paroxysms of which were beyond my strength. He became more than a father to me; he received me into his house; became my physician, my friend, my instructor. He gave me health, amusement, repose. I am recovered, and, thank God, and my good Samaritan, for being able to enjoy leisure and study, among

scenes the most interesting I ever saw. At this distance from the walks of science, he finds it so interesting, to converse with men, who are fond of his pursuits; and has taken such an affection for me, that he gives me books, insects, plants, antiquities, drawings, and I believe would empty his library for me, if I were selfish enough to permit it.

"I made a tour from this place through the Minor Peninsula of Chersonesus; and afterward traversed the southern coast of the Crimea, on horseback. My raging fever accompanied me the whole way. It was on my return that I took possession of these delightful apartments, where my mornings are passed in study, and my evenings with the most polished and agreeable circle, in the whole Russian empire. His daughter has been married, since our return to a general officer. We accompanied her to church, and joined in celebrating the wedding. Cripps is in the full enjoyment of that eternal health, which never leaves him; and gets fat in the midst of gallantries, while I am dusting folios with the Professor.

"Now I will step behind the curtain, that you may have the theatre entirely to yourself, and stretch your legs at leisure among the rocks and ruins of this historic land, enjoying the fruits of many a painful pilgrimage.

"The tomb of Theagenes, among the ruins of the

city of Chersonesus, or Cherrsonesus, if you cavil with Strabo in your hand, was broken open, and ransacked by the Scythian troops, in seeking for building materials. I made the discovery by accident, seeing the marble that closed the mouth of the sepulchre among stones and mortar, destined for the repairs of the Greek church at Sebastopole. It is a beautiful bas-relief, representing a philosopher or historian, with a manuscript roll in his hand, and his wife by his side; in the finest drapery of the Grecian sculpture. It was sold to me for a trifle; but when the Scythian generals found I had obtained something which I valued, they again deprived me of it. I hoped to have placed it in the public library, with others, which I have sent before to Constantinople; all I can do now is to send the inscription. Here you have it, date and all:*

ΘΕΑΓΕΝΗΣΧΡΗΣΤΙΩΝΟΣ ΚΑΙ
ΗΓΥΝΗΑΥΤΟΥ ΟΥΛΠΙΑ ΜΑ
ΚΑΡΙΑΕΤΩΝΖΕΚΝΒΧΑΙΡΕ

"Theagenes the historian was of Rhegium, and flourished in the fifth century before Christ, which does not agree with the date; and, therefore I leave to the sages of the Cam, to determine what Theagenes this may be. I have been deprived of

* See Dr. Clarke's Travels, vol. i. p. 495.

other bas-reliefs, and inscriptions of more consequence, in the same way. What think you of an inscription made in the Crimea, in the time of Tiberius? beginning with these words—

ΒΑΣΙΛΕΥΟΝΤΟΣΒΑΣΙΛΕΩΣ ΤΙΒΕΡΙΟ

And now let the scene change—Whew!—away with inscriptions!

"The Crimea is almost untrodden ground for the antiquarian. History will gain force, as it becomes explored. Strabo is more exact, than Patterson's Book of Roads. Modern geographers who would illustrate the ancients, have attempted it in their closets. Some errors, and some accuracy, distinguish them all. A map of the antiquities of the Crimea was much wanted, and, with infinite labour, I have completed such a work, correcting the errors of predecessors, admitting their facts, and adding what was new. Let others, who come after, render my labour superfluous.

"Pallas is gone, for a few days, to his vineyards at Sudak. When he returns, we shall go over the Minor Peninsula again together. I made several discoveries, which were unknown to him; and we go to work among the ruins together, groping for inscriptions and plants. The two last volumes of the Flora Russica, will be committed to my care. He cannot publish them in Russia. The drawings

are all finished, and the letter-press wants but little addition. The engraving only remains to be executed. I have many plants not in Linnæus, and some never described by any botanist. Add also, coins, manuscripts, insects, animals, drawings, and such other acquisitions as are necessary to illustrate the ancient or modern history of the Crimea. Cripps makes a very useful journal, and has collected plants with uncommon care. I do not think any have escaped him. I assure you, I never had such a traveller. You will see some day what he can do, when in search of *fenomenons;* nor do I believe you would change him for the best instructed companion with whom the University could supply you. This tribute is but due, for his long attentions and excellent conduct to me, and it is the more so in being strictly truth.

"The greatest mischief that geography could receive, originated in the ignorance and vanity of Potemkin, who in attempting to give the different places in the Crimea their original names, falsely christened half of them, and made a confusion which it is difficult to remove. The principal object should be to determine the site of Pantocapœum and Phanagoria. This, I hope, has been done by me; and to an intimate friend, I may make this avowal; because it never was done with any degree of accuracy before. Formalconi, Oderico, Count Potocki, have all rendered service to the

cause; but they never quitted their arm-chairs; and Potocki himself acknowledges, that an ignorant man may do more on the spot, than a man of letters in his closet. The fact is, we have no maps. Examine the best atlas:—open D'Anville, or Vaugonde—what a place they have made of Kuban, and the country of the Don Cossacks; and what confusion and error prevail on the shores of the Palus Mæotis, and the Pontus Euxinus!

"The temple of Diana of the Tauride remains, at which Iphigenia was priestess. Take care how you approach it! The goddess requires that her altars should be annually stained with the blood of a stranger. We found her shrine: and without claiming any relationship to the daughter of Agamemnon escaped full as well as Orestes and Pylades. It is not so easy to ascertain the situation of the old Chersonesus, which Strabo mentions as in ruins. The other city of the same name is so great in its remains, that the portals were standing when the Scythians first began their favourite work of destruction after the conquest of the Crimea. Achilleum is found; Namphæum, Athenaion, Parthenium,—the tombs and palace of the Bosphorian kings: the limits of their empire at different periods, with the situation of Myrmecium and Apaturos; all of which are determined for the first time; for, before, you might as well

have placed them in the Thames, as where they stood in the maps.

"We sail for Constantinople, in fourteen days. A Turkish Brigantine, commanded by Osman Kees, lies for us at Kosloff. The storms in the Black Sea have been incessant. We have such bad luck by water, that we dread the voyage; but the autumn is reckoned the most serene and favourable season. My whiskers already give me the look of a cat, as black as ink, and reaching from ear to ear. We shall be externally very genuine Turks in a short time, and the sun has qualified our skins for the true Mahometan tint. Perhaps I have already told you, I found a plant near the Don, a Campanula, with this remarkable distinction: the flowers of the Campanula were blue, with a calyx, but between every ramification and the stem there appeared a small white flower without a calyx; the flowers of the Campanula being Pentandria Trigynia, and the white flowers Tetrandia Digynia. Pallas said, he had never seen nor heard of such an instance before.

"Aug. 28, morning.—He is returned, at this moment, with his carriage laden with the riches of his vineyards, on the south coast of this peninsula. I have therefore no time to add more."

To the same.

"ACHMEDCHID, capital of the Crimea,
September 25, 1800.

"Well, here I am, upon the eve of embarking for that long wished for spot, Constantinople! See how fair and plain I have written its name! you did not perhaps expect that you would receive another letter from the Tauride. We have lived two months with Professor Pallas, in his comfortable house, and delightful company. Do not think I lost my time: I left my studies but to hear the harp, when his fair daughter of an evening sang hallelujah. Now for the Euxine! All our things are on board; we wait only the captain's call. This is truly a holiday for me; and it is the first I have enjoyed since I left England. My work is done—my journal complete—my cases packed—my health restored. Many things will induce a remembrance of the Crimea, which I cannot now mention. It has been an interesting country to both of us.

"I made a second visit to the Minor Peninsula of Chersonesus, accompanied by Professor Pallas, Mr. Galera of Genoa, and Cripps. We ransacked for plants and ruins. Of the first we have some, never heard of in England, nor ever known to Europe. Of the last, we had also satiety. We discovered not only the old Chersonese of Strabo;

but the very temple of Diana, upon the promontory Parthenium.

"I have many papers of importance in my hands, and only tremble, fearing they may be lost on the Black Sea. If Cripps and the papers were safe, for my poor carcase, the dolphins may have it as soon as they please. The completing of the Flora Russica is entirely given to my care. The whole of Professor Pallas's Herbarium is at my disposal, and the genus Astragalus alone is as large as the collection of botany, entire, of common individuals, and this I take with me to Constantinople. The next—follows next spring. The genera, Pedicularis, Veronica, Lychnis, Pyrola, &c. are all equally complete. It has resulted from the study, labours, and voyages of his life. You must not let my mother see this letter, because I have to tell you, that in case any accident happens in our passage across the Black Sea, I have instructed Pallas to write to Dr. Pearce, well knowing that you would not like to receive a letter with such news; when you hear we are safe at Constantinople, you may send her this, or any other letter of mine you think proper.

"For literary news, I can tell you, that Professor Pallas is finishing his last work of travels, part of which has appeared at Leipsic, and the rest will be published next summer; comprehending many interesting observations in the Crimea.

"What he has given to us, and in how many articles we are indebted to him for instruction, I cannot enumerate. Tournefort's Travels, of such immense importance to a traveller in Greece, he has placed in our trunk. I have also a present from him to Sir Joseph Banks. He has furnished us with seeds of plants collected in Siberia, Persia, Thibet, Kamschatka, the American isles and continent, &c. &c.

"Poor Tweddel lived here, as we have done, and profited by the same advantages. I have seen his letters, and some of his drawings. At Constantinople I hope to recover some of his manuscripts and papers. The artist who worked for him, is very well known to our servant Antonio, a Turk, who lived with him till within a month of his death. Antonio speaks about eleven languages; so you may imagine how serviceable he is, and will be, to us: at present, he cannot utter a syllable of English, which is still an advantage.

"If you wish, in few words, to have an idea of the Crimea,—it is a sterile plain from Perecop till you come near the south coast, which consists of a barrier of high limestone mountains. The towns of Karasu, Basar, Achmedchid, Bachiserai, and Achtiar, form a line on the outside of them to the north. It is remarkable that a country containing so many interesting and even important objects should be so little known, and so rarely

visited. There does not exist even a tolerable map of it.

"The Minor Peninsula of Chersonese, comprehended within the isthmus, formed by the harbour of Balaclava, or Portus Symbolorum, and that of the Clenus, is full of antiquities. The most remarkable are, the grottoes of Jukerman, the ruins of the new and old Chersonese, founded by the Heracleotes, the temple of Diana, the wall across the isthmus, with the various fortresses and tumuli of the Chersonesians.

"Of new plants I can now only send you a few names. Centaurea Myriocephala, Melica Villosa, Salvia Hablixiana, Robinia Jubata, Rosa Pygmæa.

"The climate of the Crimea is as much impregnated with Malaria, as the foulest marshes of Italy. Every body suffers the intermitting fever. If you take milk, a tertian. If eggs, ditto. If butter, ditto. If you walk out in the evening, ditto. If you drink water after fruit, ditto, ditto, ditto.

"Pallas instructs us to look for the rarest and best plants, in sandy soil, on chalk hills, and in salt marsh. To dry specimens of the Sedum, or of Aloes, or any fleshy plants, steep them the first two or three days in brandy, and it succeeds to perfection. All Siberian, Lapland, and Arctic plants thrive best under bell glasses. Who could have suspected this? All aquatic plants may be raised in pots, containing a small quantity of

mould, and afterward filled up with water. The Dutch have done this.

"I wish to go from Astarabat on the southern coast of the Caspian, with the caravan, to Multan, by the north of Persia, and up the Indus to Cashmir. The man who shall do this, will make important discoveries. He would traverse the highest part of Asia, on those wholesome mountains, where the human race was first planted. He would discover the original customs and dialects of the first men. Animals, plants, and minerals, unknown to the whole world, would result from his researches. I will give up ten more years to this plan, if you will make a party. Government shall lend us a hand, and if they will not, I can scrape together enough to buy potatoes and tea. Health may fade, even life may expire; but science will be thankful for our labours, and the moral critic candidly acknowledges we have not idly wasted this portion of our days. Will you believe that at Samarcand, in the territory of the Bocharian Tartars, there is a library of many thousand manuscripts, in Hebrew, Armenian, Coptic, Parthic, Chaldean, and other languages? I have conversed with Cephalonian spies, sent by the British Company in India to treat with the Afghans, the conquerors of the north of that vast district, which seems almost unknown. Countries half as large as Europe, become the seat of war or peace.

Nations and empires are won or lost, and the refined part of the globe know nothing of it. Whatever we do, let us not sit still;—there's time enough for that, when we lose the use of our legs.

"In the mean time, by way of a lounge, I have my eyes upon Anatolia. The cities of Amastris, Sinope, and Trebisond, would afford some curious inscriptions. Now as I know you would be gratified in receiving a note from Professor Pallas, I leave him to add a few words in his hand-writing.

(*The following is in Dr. Pallas's hand-writing.*)

'Dr. Pallas is very sorry he had not the pleasure to see Mr. Otter in the Crimea along with Messrs. Clarke and Cripps; it would have been an additional good fortune to make the acquaintance of a gentleman, of whose parts he was told so much good.'

"Tell Malthus we never neglect the thermometer. It has been observed without the exception of a single day since we parted from you. The greatest heat of the Crimea this year has been ninety-five of Fahrenheit's scale, or thirty-seven of our thermometer, which is on the scale of Celsius. The last winter, and the preceding one, in this country, were the severest they have ever felt. The thermometer fell to eighteen degrees below 0, of Reaumur's scale. Generally in the Crimea they

have not above seven degrees of cold; and even that is astonishing in such a latitude. They freeze their wine here, to extract the water, and obtain the quintessence. The Tartars have an opinion, that since the Russians came, they brought their winter with them.

"My next will certainly be from Constantinople, if we survive the passage. The only cause of fear originates in the ignorance the Turks have, of navigating their strange vessels, and the heavy load they give them."

To his Mother.

"Odessa, on the Black Sea, near the mouths of the Danube. Oct. 30, 1800.

"At last I am enabled to write the true particulars of our situation in this execrable country; for as I shall not send this letter to England, till we are safe landed in Constantinople, it will not be subject to the inspection of a rascally Russian police, and, of course, a son may write to his parent, without being put in prison for his affection, or having his letter confiscated, for telling his situation. If you knew all we have suffered since we left the Swedish frontiers, you would not wonder in finding an oath in my letter; but perhaps feel disposed to add a good hearty one to mine. I

have travelled ten years, and seen every part of Europe, except Spain and Portugal, but never met such injustice, villany, thieving, insult, and barbarity, as in Russia: what, is the name of an Englishman, think you, a protection here? Is Lord Grenville's passport worth a rush? 'Free subjects of his Britannic Majesty, travelling under the protection of British laws.' Those are fine-sounding words, but have no meaning among the Scythians. We have been nothing better than prisoners of war in a country of savages, these last ten months. I suppose you know, that war was actually declared in Petersburg against the English. We were then in the Crimea. I knew not when to hope for an escape out of Russia. We have been trying to get to Constantinople ever since the month of June. At last, we have trumped up a sort of passport, which has duped the hogs about the ports of the Black Sea, and now wait only for a wind. In the mean time, I shall get this letter ready to go to England, on the moment of our arrival, and when you receive it, you may be convinced we are snug and safe out of the trap. Of all the traps set to catch mice, none ever equalled the trap which this country offers to travellers. If you hear any one talk of coming here, tell them to jump into Newgate sooner than attempt to visit Russia. Times are altered. Catherine is dead! The present emperor is both a fool and a madman, accord-

ing as he is in good or bad humour. But the envoys keep all this matter secret, and the Russians take care no Englishman shall tell tales, so long as he remains in the country. You heard of their turning us adrift, without servants, in a forest, without interpreters or guides. But that is nothing to what we have suffered since. Thank God, their game is near the end; and it will be our turn to play next. I cannot pretend to give you a catalogue of their pranks. The Russians treat travellers, as some children use flies; cut off their wings, and put them in a box, among spiders, to be hunted.

"When we came to Petersburg, Sir Charles Whitworth applied for our servants. Paul was in a passion; swore we should neither have our own servants nor any others. The merchants were all packing up to get out of the country—free British merchants! Paul swore not a man of them should stir. Petersburg soon became too hot for us. We were advised to make the best of our way to the southern frontiers, and cross into Turkey. Arrived in Moscow, Count Soltikow, the governor, refused to give us passports, either to go on or turn back. It was an even chance whether we should step into our carriage, or into a prison.——We looked at one another, patiently exclaiming, 'Woe is me, that I am constrained to dwell with Meshech, and to have my habitation among the tents of Kedar.'

"At last, we reached the Crimea; having wandered a roundabout journey, among the mountains of Caucasus, quite into Circassia, to be as much forgotten, and out of the way as possible. No sooner landed in the Crimea, than our money failed, and we had not a sous left to buy bread. Our spirits seemed to rise in proportion to our difficulties, and when bread and money failed, we imitated the Russians, and knocking down the first old hen we saw, stewed her into broth, and swallowed her poor old bones upon the spot.

"Luckily, just at this critical season, we met with the best of friends, Professor Pallas, to whom the late empress had given an estate in the Crimea, and who received us into his house, and was in benevolence a father to us. With him we remained the last summer, till we had arranged matters so as to enable us to quit the empire, I hope for ever.

"We left him about three weeks since, loaded with every present he and his family could stow into our carriage or trunks. Do not console yourself with the idea of his being a Russian! He is a German by birth; but in all virtues of hospitality, humanity, and the whole chapter of what men should be, a Samaritan. I tumbled into a couple of fevers; first into a tertian, then into a quartan. Cripps also failed, and had a fever; but it was only for Pallas to snap his fingers, and break half a dozen bottles, in searching for our physic, and

we were well in a trice. I think I see him now, walking about with his Quassia and Quinquina. Mrs. Pallas used to say, his portrait should be taken, with a bottle of physic in one hand, and a box of pills in the other. I am sure, in whatever manner it is finished, it is a portrait you will admire, so I leave him just as he is.

"We were to have sailed from Kosloff, in the Crimea; but the vessel was overloaded, and we escaped, and came to Odessa, and now you are as wise as before. This accident gave us additional delay, and a journey of five hundred miles into the bargain. We had decided to go by land, and sent to Lord Elgin, at Constantinople, for an escort of Janissaries, to meet us at Bender on the frontiers, and conduct us clear of the rebel army of the Pacha Paswan D'Oglou, who is in full force among the mountains of Bessarabia. Meeting here with an imperial brigantine, laden with corn, and bound for the Porte, with the first wind, we shall leave the Janissaries to cool their heels at Bender, and sail with the captain, a Venetian, Francesco Bergamini.

"I live but in the hopes of finding some news of you, at Constantinople. 'Of all places, my dear! who would think of going to Constantinople for news of me?' These are the very words! I heard you say them to Anne, looking over your spectacles. God bless you! if I could but just kiss the

tip of your nose, I should expire in peace! 'What can he mean, Anne, by expiring?'

"I'll tell you! I'll pull off my coat, and waistcoat, and breeches, but not my drawers, nor my stockings, on account of the bugs; nor my jerkin, on account of the lice. Then I place myself in a horizontal position, as nearly as I can, upon a species of four-posted bier, such as they kill hogs upon in England, and after the accustomed signals of distress, commit myself nocturnally to that kind of torture, which the Russians call repose; and if this is not expiring, tell me what is?

"The last intelligence I obtained from Uckfield —God knows how! but by one of the lucky chances which baffle mortal ken, followed me to Moscow, and arrived just as I was leaving the place. It was contained in a letter from Anne. Since that letter, all is dark and silent—a horrid intervention of non-consciousness, from which an enemy would wish to deliver me. It is true I told you to direct your letters to Vienna; but I have written one since, to beg for a line of light and information, to Constantinople. It is impossible to conjecture what the Russians may have done with that, or any other of my letters; or to what inexpressible purpose it may have been appropriated. If you have received it, I shall be comforted—if not, God help me!

"You will have full time to write to me at Con-

stantinople, as, from the lateness of the season, we shall not leave that place till the spring. You wonder why we are not now in England, according to our plans and promises. You must come to Russia to learn the true cause of our delay; and when you have travelled through this empire, you will raise your eyes in astonishment, to find we are so much advanced in our journey.

"Your letters must be addressed, 'aux soins de Messrs. Barbaud et Co. Constantinople.' If it should happen, that we have left the place, proper directions will be given, that your letter may follow me. But as we are both eager to collect the plants of this country, on the opening of the spring, it is not probable that we shall have left Constantinople, till your letter arrives. Enclose in another cover, a letter of recommendation from Mr. Crawley to any house in Smyrna. I remember once he gave me a letter to a lady there; but as I did not go, the letter was returned.

"One night in the Crimea, a gentleman, a native of Smyrna, Colonel Durant, gave us lodgings in his house. What was my surprise, to find in him the cousin and namesake of Mr. Crawley. Ask Mr. Crawley, if he knows him. He served in the Russian army, under Prince Potemkin, and was in high favour with that Arch Scythian.

"Pray tell Otter and George Stracey, to write a letter to Constantinople to us. There is no kind-

ness which is felt more sensibly, than a letter from England, when one is so far removed. Tell my dear brother George, that I do not write to him, because I consider a letter sent to you, as common to the whole house. But I hope he will have the goodness to send me a few lines.

P. S. November the 2d. From the cabin of our ship, at night.—The favourable weather we enjoy upon these fearful waters, enables me to take up my pen, which I have seldom been able to do at sea. We are now in the midst of our voyage, and have been three days on board; such delightful sailing, the ship hardly appears in motion, and yet with heavy lading she is now going at the rate of six knots an hour.

"We have just passed the mouths of the Danube, and the Isle of Serpents, on which once stood a temple of Achilles, so sacred, that the aisles of it were regularly visited at the setting sun by white swans, who came to sprinkle water on its altars with their dripping wings. White dolphins play around its shores.

"I had formed high ideas of the mouths of the Danube, and expected to see Neptune in all his pomp, greeting the arrival of the river nymphs. My gaudy pageant sunk into nothing! a flat muddy shore, with a wide bed of reeds! But the quantity of water which the Danube, in a very un-

genteel and underhand way, conveys into the Black Sea, is amazing. It covers the sea with a white colour for ten leagues, and creates a current which we profit by at this instant, and which is to continue to the canal of Constantinople. Within three leagues of the mouths of the river the water is fresh, and within one league it may be drunk by the crews of ships passing.

"Good night! I must now go and walk on the deck; for we have a full moon, and other ships being in company, render the scene too pleasing to be neglected by sitting here to describe it.

"P. S.—Novemb. 15th, 1800.—Still at sea. When I am able to give an account of our landing, I shall feel more comfortable than I do now.

"What we have seen and suffered, since I wrote the last paragraph, will please more round a fire, than in a letter. We had finished our voyage, having arrived off the mouth of the canal of Constantinople, on the morning of November the 5th. A calm prevented us from going in; but we had even the houses in view and thought to arrive before noon. A hurricane succeeded the calm, and we danced beyond description; being blown for nights and days, out of all calculation. At last we got into a little port in Turkey, and here we wait a favourable change. I have copied the log-book of the ship, that George may see what sort of busi-

ness a ship's crew has in a hurricane. We have now been sixteen days at sea, for a passage usually performed in four, and it is very uncertain when we may end our imprisonment. Once more, good night! The ship rolls too much to add more. Only be assured of this, when you get this letter, we shall be, please God, safe and well.

"P. S.—Novem. 21st. Canal of Constantinople. —Rejoice with me, all of you! On this day we effected our escape from the Black Sea. We experienced another dreadful storm, and now lie snug within the canal."

To the Rev. William Otter.

CONSTANTINOPLE, Dec. 24, 1800.

"I could wish my head was in a better state to answer the long acceptable letter I have received. But the courier is going, and if I lose this opportunity, it may be some time before another occurs. Your letter is dated November the 3d; and it is the only one I have received from you, since you went to England. Indeed, I have had very few letters from any of my friends. If you send the books you have collected, respecting the Trojan controversy, they will be more acceptable than you can imagine. We have not here even pens or paper.

Constantinople with regard to literature is worse than Kuban Tartary.

"If you have seen my last letter to Uckfield, you will know what danger we escaped in leaving the Black Sea. Half the vessels that sailed in company with us, are lost in the passage from Odessa. I cannot now tell you the horror we endured. An extract from the ship's log-book will better do this at a future period. But you will have some idea of it when I state, that we sailed in four days to the mouth of the canal of Constantinople, within sight of the light-house, and having carelessly lost the opportunity of getting in, were caught in a hurricane, which I believe has been more or less felt all over Europe, and contended during twenty-four days with the fury of a sea, in comparison of which, the Biscayan billows, and the roll of the Atlantic, might be deemed safety and repose. In reflecting upon those dangers, or in beholding them, my heart neither now, nor then, would have sunk so much, had it not been attended with a consciousness that Cripps, from the goodness of his heart, was brought into danger on my account. At the same time, he is himself a perfect stranger to fear of any kind, nor ever betrays the slightest alarm even when death stares him in the face.

"My mother will not be pleased to hear, that she may again direct letters to Constantinople.

We cannot stir from this place till we have an answer from England; for by the mismanagement of Cripps's friends, we have not received a letter of credit he wrote for to enable us to return. You will, therefore, tell my friends to write to me, as before, and I hope to hear, above all, from you. God knows, when we may get home. The state of public affairs is very unpromising.

"We are now all in consternation in consequence of an application made by Monsieur Jamana, the Russian minister here, demanding a positive declaration, from the Porte, either for peace or war with England. As things now appear, we may be all in the Seven Towers, in seven days, and give up our lodgings to the French prisoners there, while we occupy their quarters.

"By the papers, I see that George has sailed, and I live in the hope to see him in the Archipelago. It is now near ten years since we met. An American frigate leaves this place on Saturday, and the Captain, with a letter from me to him, promises to hunt his ship, throughout the Mediterranean, and will probably find him in Malta.

"Thank God we are at length free from Russia, though not clear of its influence! Long before any embargo was laid on British property, we knew of a Russian frigate cruising in the Black Sea, with orders to capture any English vessel that might be found to have passed the canal. You

have no idea of the internal state of that country at this moment. The list of prohibitions and proscriptions is so voluminous, that a man has only sufficient leisure to sit at home and study them; for it is impossible to venture out without a trespass, and spies are at every corner. The works of Pallas being printed at Leipsic, were sent to him in proof sheets for correction. Even these were confiscated, and so there is an end of all Pallas's works. What genuine Scythians! While I was in Russia, I could not tell you what I shall now relate, and you will rejoice with me in the news. Pallas acted as a father to me."

To the same.

CONSTANTINOPLE, Jan. 20, 1801.

"My quartan fever with frequent return has prevented me lately, when I wished to tell you, with what impatience we wait your answer to our last. The books you mention, more precious than the gold of Ophir, never came. The Turkish fête of Ramadan is begun, and all the minarets in Constantinople are illuminated. I have seen every thing worth notice here; and wish to move, for change of air and scenery. Yesterday, the ceremony of celebrating the Queen's birth-day, drew all the English to the British palace. It was high

gala. Lord Elgin gave a magnificent ball and supper. Cripps, in full uniform, with plumes and whiskers, displayed the activity of a Scotch reel, to all the motly tribe of Greeks, Armenians, Turks, Arabs, French, Germans, Italians, Russians, Swedes, Prussians, and the rest of the list. We have here pretty girls, and balls without end. If you could peep in, you would see me shaking with ague, affecting youth and gaiety, whirling Lady Elgin in all the fury of 'Money Musk,' 'Drops of Brandy,' and 'Jenny dang the Weaver.' You know how fond I am of dancing; alas! in either shoe I feel the weight of those years, that have intervened between my dancing pumps, and my travelling hose. Now, some little skipper says—'You seem fatigued, Mr. Clarke!' How garrulous it would be to reply—'Once I knew not fatigue.' No, I take my hat silently and walk home, and then my mortification is complete, when some Euphrosyne exclaims, 'What, don't you dance after supper?'

"You will wish to know what my serious occupations are. It is not the season for plants; though some bloom here all the year through. I have collected many of the most interesting Greek medals; it is instructive to possess medals of the countries one has particularly visited or studied. An artist, who was celebrated in Rome, is forming drawings for me, of such things, as are most worth

notice in Greece, and even in Constantinople. As I have been admitted to places where never Frank before had placed his foot, I have endeavoured to gratify others. Of these are, the interior of the Seraglio, the Haram, or apartments, and palace of the Sultanas, &c.

"I cannot promise much for my journal of Constantinople; because I do not choose to copy what others have said before, and there is nothing to add to their labours. But it is pleasant to know that no such journal is wanting. Of all the cities in Europe, not excepting London, there is no one so well known by the works which have been written to describe it as Constantinople; of this a remarkable proof occurs in Gibbon, who, without visiting it, wrote the best description extant, by the works which had previously appeared. In fact, all has been done. Its antiquities suffer no change, and Turkish manners and opinions, like Egyptian obelisks, stand through ages the same.

"The late publication of Dallaway I would particularly recommend to you. It is in every respect the best topographical work I ever read, and I have given it fair trial, by examining the description with the objects described; at the same time, written with such interesting brevity, that its perusal is never tiresome. Every syllable he says, whether on places or manners, is worth your notice. He gives you the clear and simple truth,

without *verbiage* or parade. The prints would disgrace Velzi's booth at Pot Fair. It is a pity they were admitted in a work of such character.

"Now for the Troade, which seems to interest you so much; and, by the beard of Mahomet! I know not how 'twill end. Lord Elgin has lent me the publications you mention; I have read them with some attention, but not having been on the spot, have no opinion of my own to offer. Tweddel was decidedly against Bryant, and with the Trojans, which is intelligence of weight with you; and I have it from the authority of those who examined his papers. One point seems never to have been noticed by either party. Might not Homer, whose birth-place is so undecided, have passed his earliest years, so as to have the most accurate knowledge of that country, and to have accommodated a fiction to scenery with which he was familiar; as did Virgil and Ovid, respecting the Lake Avernus, and the Caves of Cuma; the promontory of Misenum, and the Gulf of Gaieta?

"Thus his poems may accurately coincide with all the existing phenomena of the Troade, without granting the necessity of the existence of such a city. This is merely the idea of the moment, as I write. Very soon I will go, to make, at least, such inquiries as may satisfy your mind respecting the former; as for the latter, it may ever be a point beyond my power to decide. Respecting

the accurate agreement of the geography of Homer, with the present plain of Troy, we have few sceptics here. Those who know most of the matter, find it answer perfectly well. The antiquities which interest me most here, are the three brazen serpents, which supported the tripod of Xerxes, in the temple of Delphi. Gibbon says of it, 'The guardians of the most holy relics would rejoice if they were able to produce such a chain of evidence, as may be alleged on this occasion.' At the bottom of one of the obelisks in the Hippodrome, is also a bas-relief, representing that circus, as it was at the time those pillars were erected. As this has been hitherto disregarded, I shall have an accurate drawing made from it, which will tell more than a volume of description.

"I am in hourly expectation of hearing of my brother's arrival at Rhodes: 18,000 men are there in good health, and the rest daily expected. If he come, I shall prevail on him to take us to Egypt, to see the army make their *debut*. A great levy of horses and provisions is making here, and over Asia Minor. The English will find plenty of work, for the French are no fools, and their position is not a bad one."

To the Rev. William Otter.

"Source of the Simois, on Mount Ida, below Gargarus. March 11, 1801.

"Judge of my rapture! Enabled to date a letter to you, at the very source of the Simois. You will read with pleasure, and I write with joy. Enterprise has subdued all! I have health in all its vigour. My ague I left at Constantinople. Here I sit with Cripps on a spot that never traveller witnessed since the first Christians made these wilds their refuge, surrounded by scenery more sublime than Salvator Rosa ever conceived or viewed. Yesterday my life, which always hangs by a thread, had nearly fallen on the peak of Gargarus. Deserted by all, even by my guides, and compelled from the great danger and horror of the scene to leave Cripps on its third summit, I climbed the glaciers, which cover the aerial top of Ida—drove Paris from his judgment-seat, and drank brandy with the Queen of Love, in view of Olympus. The hundred things I have to tell you will find vent, I hope when I get back to the base of the mountain: I now borrow our artist's pencil, to write that the Source of the Simois, object of years of hope, is before my eyes!"

RHODES, April, 3, 1801.

"The base of the mountain, you see, has extended to Rhodes. I was overcome with fatigue, which brought on my fever, and the long letter I intended to write, must dwindle to nothing. I am once more restored to health, and, having traced with a pen the lines I pencilled at the Source of the Simois, will endeavour to recollect some of the things I wished to tell you.

"We waited at Constantinople for news of you, till the plague drove us off; and the Captain Pacha having fitted up a corvette to take me to my brother, on the coast of Egypt, I hastened to join the British armament.

"I wish to tell you of my acquisitions in Constantinople, but they are all swallowed up in the riches of our Trojan expedition. One thing only I will mention, as it has been considered a very important and singular discovery. I slept not for many nights after I got possession of it. There are poor Turks in Constantinople whose business it is, to wash the mud of the common sewers of the city, and the sand of the shore. These people found a small onyx, with an antique intaglio, of most excellent workmanship, representing Æneas flying from the city, leading his boy by the hand, and bearing on his shoulders (whom do you suppose?)—not his father; for in that case, the subject might have been borrowed from Virgil or

Ovid, but—his wife, with the Penates in her lap; and so wonderfully wrought, that these three figures are brought into a gem of the smallest size, and wings are added to the feet of Æneas,

'Pedibus timor addidit alas!'

to express by symbols the most explicit nature of the story, and the situation of the hero.

"Thus, you see, it is proved that a tradition (founded neither on the works of Homer, nor the Greek historians; and perhaps unknown to Virgil and the Roman poets, who always borrowed their stories from such records as were afforded by the works of ancient artists) existed among the ancients in the remotest periods, respecting the war of Troy. The authenticity of this invaluable little relic, the light it throws on ancient history, its beauty, and the remarkable coincidence of the spot on which it was found, with the locality of the subject it illustrates, interested so much the late Swedish minister, Mr. Heidensham, and other antiquarians of the first talents in this part of the world, that I have given it a very considerable part of this letter; hoping it will not be indifferent to you. I will be guilty of no other ostentation respecting my Greek medals, than to add, if you can find in Comb's Catalogue of Hunter's coins, or Pinkerton, any medal described as unique, that medal I will shew you on my return.

"As for our expedition to the Plain of Troy, and the Source of the Simois, which you so much recommended to me, and in the course of which I used the greatest care and industry, I hope the result of it will entitle us to your approbation. I really know not how to express the pleasure and satisfaction it afforded me. Our success exceeded all that has hitherto attended our travels; and if, with the facts which I could offer, any doubt can remain respecting the authenticity of Homer's poems, or their application in the strictest sense to the geography of the country we traversed, a much worse principle than want of information must actuate the minds of those who affect scepticism with petulance, and maintain error with obstinacy. I suffered, at first, from the want of the books you promised me, and even for thinking of them I am thankful to you. By dint of severe application, I copied all that was necessary, from all that has been written, borrowing here and there, and at length I was armed as I could wish to be, in an undertaking recommended by you, and which I should never have had the courage to encounter, but at your instigation. You will always acquit me of prejudice, by the letter I sent to you on this subject after my arrival in Constantinople. It is no more than plain honesty to say, that whatever opinion a man may form in his

closet, on the side of old Jacob,* it will be annihilated by the evidence the country offers. In reading Chevalier and his followers, you would think they had been groping about in the dark, collecting with infinite care and difficulty, a small portion of very doubtful evidence. These are the first persons you would censure upon arriving in the plain of Troy.

"It offers every fact you want; there is nothing doubtful. No argument will stand an instant in opposition to the test of inquiry on the spot; penetrating into the mountains behind the Acropolis, the proofs grow more numerous as you advance, till at length the discussion becomes absurd, and the nonsense of Bryantism so ridiculous, that his warmest partisans would be ashamed to acknowledge they had ever assented for an instant, to such contemptible blasphemy upon the most sacred records of history.

"We set out upon this expedition with two of the first artists in Europe. Lusieri of Naples, whom you have heard me name; and Preaux, who was brought from the Academy of Paris, by the Duc de Choiseul. By their means we obtained forty drawings of the most interesting parts of our journey, and enjoyed the society of men of genius and taste, more enthusiastic perhaps even than you

* Bryant.

could be, surrounded by such objects. We formed a troop of twelve horsemen, and spent fourteen days in the most incessant research, traversing the plain of Troy in all directions, measuring and making plans, and copying inscriptions, and drawing. Ten days more we remained at the Dardanelles, putting our materials in order, comparing, correcting, and sending messengers for what we left behind. The Pacha of the Dardanelles gave me the free command of his *chiaoux*, to bring away whatever we thought proper—so we have for the Public Library, pillars from the plain of Troy, whose inscriptions, of whatever date, will be sufficient to prove that the wisest and most refined nations of antiquity did not expect that a retired priest, in a remote island of the northern seas, would have the temerity to oppose his dreams to their testimony.

"You are eager for me to enter upon more important matter—to give you proof positive, and so forth. How am I to do all this now? I will tell you a few facts.

"1.—Lectum is the promontory of a chain of mountains of which Gargarus, now called Kasdaghi, is the summit.

"2.—The Simois rises from the western side of Gargarus (Kasdaghi), falling from Ida.

"3.—The sources of the Scamander have still the character of being one hot and the other cold.

Estimated by the thermometer, they are both hot, though the source, in one part, is more accessible than in the other.

"4.—Xerxes, marching from Antandros to Abydos, of necessity, had Gargarus on his left hand.

"5.—Gargarus overlooked the city and plains of Troy.

"6.—The distance from Buonarbachi to the Hellespont is seven miles and three-fourths.

"7.—The tomb of Ilus is close to the mound of the plain. The tomb of Myrinna I found also.

"8.—The walls of the lower city ran beneath the hill of wild fig-trees, so as to expose it to an enemy on that side.

"9.—The Acropolis is impregnable, but by stratagem. It is covered with ruins. The Grecian horse, thrown from its precipices, would have been dashed to atoms, and hurled into the Simois.

"10.—When the Simois is swollen by floods, it carries all before it.

"11.—The plain is sufficiently spacious for the events related by Homer. It is much larger than the plain of Marathon.

"12.—The soil is fertile in the highest degree.

"13.—The plants mentioned by Homer, are the plants peculiar to the Kirk Ghios, or Scamander.

"14.—Udjek Tepe, or the tomb of Æsyetes, lies in the road leading from New Ilium (Strabo) to Alexandria Troas. It is the only spot which a

spy sent from Troy could choose to survey unobserved the naval station of the Greeks. He could regain the city by speed: because his pursuers must cross the Scamander, and ascend a steep ridge to follow him.

"15.—From Gargarus to the point of Lectum, the mountains, gradually falling, form by their tops a series like a flight of steps. Thus Juno is made to land at Lectum, in order to ascend to Gargarus.

"16.—The temple of Jupiter the Deliverer, is on a platform below Gargarus. It seems to have furnished mineral baths for the cure of diseases.

"17.—The distance from Gargarus to Lectum is thirty miles.

"18.—The tomb of Hector has been opened; it is constructed of stones.

"19.—The ruins of the temple of Apollo Thymbrius, are like a forest of pillars. The place is now called Thymbreck. The mouth of the Simois is called Mander, or Menders.

"20.—The place to which Æneas retreated in the mountains is called Æné.

"21.—At the season of the year, in which we were there, the old channel of the Scamander is full, the whole way to the junction with the Simois.

"22.—Ulysses hid himself among the reeds and rushes, at the sources of the Scamander. At this day, he might repeat the stratagem, and lie safe from discovery, if a whole army were after him.

"23.—The plain of Troy has been thought a desert, without any traces of cities or ruins. It is a museum of antiquities; so many are not found in any part of Greece. I speak of the ruins at Thymbreck, at Tehiblack, at Calafat, at New Ilium, at the sources of the Scamander, at Buonarbachi, at Erkessi, at Sigeum, at Alexandria Troas. But travellers have been accustomed to pass a day in its examination, whereas a quarter of a year might be well spent in the employment. And what is the reason that among these ruins are always found the granite shafts of Doric pillars decomposed by time; which has taken place in no other ruins in the known world, and it is known that granite will resist the action of the atmosphere during a series of ages? Are we not to answer, that these pillars were works of a remoter date, brought from other ruins to serve in the construction of those edifices, from which they have a second and a third time fallen to decay.

"24.—The walls of the Acropolis of Troy still remain. It was called Priam's lofty citadel, and had the epithet of windy, from its situation. There is not a point of the compass from which a wind can blow, without whistling against its walls.

"25.—Tenedos is in view, both from the lower city and the Acropolis.

'Est in conspectu Tenedos.'

"I will not proceed now, as the letter would have no end. But I will call your attention to one of the most remarkable facts that the subject can offer. It is said, the Trojans were encamped close to the tomb of Ilus, and the mound of the plain, and that in this encampment they were not in view of the naval station of the Greeks. If I find such a peculiar coincidence, as a plain, a mound, and a tomb, at a certain distance from the junction of two rivers, having now the character and the name assigned them formerly: if these are not in view of a camp stationed at this mound and tomb, what do I want more? The description answers to evidence existing and indisputable.

"But the word mound is remarkable, and one must see the mound of the plain to comprehend all its force and accuracy. In the plain of Troy, as flat as Romney marsh, rises a long mound of lime-stone, at one extremity of which is a tomb, and they form two such remarkable objects, that you would never name one without the other; but would say, 'At the mound and the tomb,' 'at the tomb of Ilus,' and 'the mound of the plain.'

"And I will venture to say, the whole world does not offer another instance of a plain in which nature and art have combined to afford a mound and a tomb so situated. Because they are not common objects. The mound itself is a sort of *lusus naturæ*, and they both prove that Homer's

description applies to them only, and his having detailed a feature so remarkable, proves that his picture is a portrait, and not a work of fancy.

"The medals found at the ruins of the temple of Jupiter the Deliverer, are the most ancient in the world. They answer to those placed among the Nummi Incerti of Hunter's Museum. A dissertation upon them, has been written by the famous Eckel of Vienna.

"I have no time to give you an account of our voyage through the Archipelago. We visited the Isle of Cos, and I have reason to think the library of Patmos contains valuable manuscripts. I saw a curious one of the Odyssey, in the hands of a Greek, but he would not sell it.

"I am on the eve of sailing for Aboukir, which you know is taken. Perhaps they have not told you in England, that our victories have cost no less than one-fourth of the whole British army. We have lost five thousand men. Some of the wounded are brought here. Lieutenant Leicester and seventy soldiers were buried here yesterday evening. I have conversed with some of the soldiers, and they say, a spectacle more horrible than the landing of the troops was never seen. Unfavourable weather had kept the English ten days in sight before they could land. So the French had all the time they wished to make every preparation, and began to think the English

were making a feint. When the regiments attempted to land, the storm of shot, sand, &c. which fell upon them was so great, that they fell like locusts. The boats were filled with dead men and blood. The French cavalry charged even at the boats, riding into the sea, and cutting down our men, with their horses' heads in the very boats. Such bravery as was evinced by both sides, is without parallel. A party of only two hundred French cavalry had the astonishing audacity to charge the whole British army. They were every one cut to pieces. At length the 42d regiment formed on the shore, and instantly charged the enemy, running up the hill most gallantly. The French were then soon repulsed. The landing was badly managed. They did not get to shore till ten in the morning, instead of landing in the night. And in one action we had no artillery, when the French guns were mowing down our troops.

"The news of the capture of Alexandria is expected here every hour, which will finish the affair."——

In consequence of the loss of a part of Mr. Clarke's correspondence, which ought to appear in this place, it has been thought necessary to give a short account of his proceedings, in the interval between his departure from Rhodes to his arrival

at Jerusalem. From Rhodes the travellers passed over to the Gulf of Glaucus (now Macri), on the coast of Asia Minor, where Mr. Clarke wrote to the author of this Memoir, an account (now lost) of the Ruins of Telmessus. Thence they sailed for Egypt, and joined the English fleet on the 16th of April, in Aboukir Bay, where he found his brother, Captain George Clarke, in the command of the Braakel. Under his guidance they landed to view the position of the English fleet, before Alexandria, and having afterward made a journey by land to Rosetta, they returned to the fleet for their baggage, and then took up their quarters in an agreeable house in Rosetta, which they hired for some time. After a stay of about a fortnight, however, in Rosetta, they were tempted by Capt. Russell, of the Ceres frigate, to embark with him for Cyprus. At this place, Mr. Clarke wrote a few lines to his mother, which will appear. On the 22d of June they returned to the Braakel, in Aboukir Bay (Captain Russell having died of a fever in the passage), and two days after they sailed with Captain Culverhouse, of the Romulus, for Acre, to which place the frigate had been ordered for a supply of bullocks, for the fleet. Here Mr. Clarke wrote another letter, no longer extant, to the same friend, containing many interesting particulars respecting Djezzar Pacha and his government; and thence, under the protection

of an escort from this extraordinary man, they travelled to Jerusalem, where the next letter is dated.

To his Mother.

"CYPRUS, June 7, 1801.
Ceres Frigate; Captain Russell.

"A few lines are better than none. George is at Rosetta, in Egypt; and we are rambling about this island. The map will shew you the distance of sea that separates us; but a frigate makes no more of walking over to Cyprus, than you do to go to Lidbetter's for tape. In a few days I hope to be with him again. I came here by way of filling up the time which must elapse before the English have taken Cairo, and then return to George; who is in our comfortable house, looking out of the window, at his cutter, which lies in the Nile below. I hope to get a little Cyprus wine, to hoist it into his ship, and make caudle for Anne. We were offered this trip, and you will allow the temptation was great.

"The death of the Emperor Paul, saves me all my property in Russia; and, I assure you, I hung my head when I heard all our cases were confiscated."

To the Rev. William Otter.

"JERUSALEM, July 10, 1801.
Convent of St. Salvador.

"The date!—the date's the thing! You will thank me for a letter dated *Jerusalem*, more for that little local honour stuck in its front, than for all the fine composition and intelligence it may contain. I hardly yet feel the reality of my being here, and when I reflect, and look back on the many years in which I vainly hoped for this happiness; on the difficulties and dangers I have encountered to get here; on my fatigue, and fevers, and toil; I am ready to sink beneath the weight of an accomplishment, possessing so much influence on my life. For all my hopes centered there —all my plans—speculations—wishes—were concerned in travels; and without visiting Egypt, Syria, and Greece, my travels, however extensive, would have appeared to me to want that nucleus, which like the heart is necessary to give life and sensation to the body. If I could repose a little, I should now, I think, be found more quiet for my future life. A stillness must succeed to the gratification of desires which have so long irritated my mind and body. I have done my portion, and am satisfied. If I sit down in Old England's meadows, I may hope to listen no more to schemes of enterprise, but leave it to younger and stronger men to

visit those regions, which I have no longer the wish, nor the power to explore.

"Do not fear that I shall give you a new edition of old Sandys, or Maundrell, or Rauwolff. I came not here in an age of credulity, though sufficiently an enthusiast. But what blind or wilful ignorance, has caused the Christians of this place, through several ages, to shew a spot as the house of Dives, and another of the Samaritan? converting the parables of our Saviour to realities, and giving the lie to the Gospels. It matters not—there are antiquities of the highest character around the city. We have been falsely taught to believe, that nothing was to be seen here but monks and monasteries, and relics, and pilgrims, and ignorance, and folly. It is not true! Jerusalem is of all the cities in the east, one of the most interesting, to which an historic traveller can resort for information. Leaving apart the common mummery which occupies its daily visitants; there is enough yet untouched and undescribed, to bring pilgrims of a very different description from the universities of Europe, to pursue the most important inquiries. If you find that what I shall write is new, and worthy your attention, it will prove what might be discovered here by men, having more time and better talents. To me it appears as though the eyes of former travellers had been entirely shut upon their coming here; or that they were so oc-

cupied by the monks and their stories, that they neglected to go out of the walls.

"To those interested in evangelical history, no spectacle can be more mortifying than Jerusalem in its present state. The mistaken zeal of early Christians in their attempts to preserve, has, for the most part, annihilated those testimonies, which might have remained at this day to establish the authenticity of the Gospel; and for which such expense and danger were encountered. Their labours are only calculated to excite regret, if not indignation; and, sighing over the havoc made by the pious hands of the crusaders, of the Empress Helena and Godfrey of Boulogne, you would lament that the Holy Land was ever rescued from the hands of Saracens, far less barbarous than their conquerors.

——— 'Quanto præstantius esset
Numen aquæ viridi si margine clauderet undas
Herba, nec ingenuum violarent marmora tophum.'

"The absurdity of hewing the rocks of Mount Calvary into gilded chapels, and disguising the Holy Sepulchre by coverings of marble and painted domes, has so effectually removed or concealed all that might have borne witness to the history of the Crucifixion, that a visit to Jerusalem has often weakened, instead of fortifying the faith of pilgrims; many of whom have re-

turned worse Christians than they came. This may be the case with those, who seek for guidance in the works and relations of ignorant monks; but Jerusalem will be no source of incredulity to men, who with the Gospel in their hands, and a proper attention to history, tread over the ground, shutting their ears, and opening their eyes.

"More pleasing is the prospect from the summit of Mount Olivet, Mount Sion, or the insulated top of Thabor, in the plains of Esdraelon. Thence, all Judea is presented to your view; and such confirmation of the accuracy of the Scriptures, that the earliest records to which history can refer, appear the most authentic. The wild Arab, journeying with his immense family, with his camels, his oxen, his mules, and his asses, is still the picture of patriarchal manners. Customs that were thought peculiar to people who have disappeared in the lapse of ages, characterise, at this moment, the inhabitants of the same countries. Novelty, so adored in Europe, has few charms in Asia. The same habits are transmitted invariably from father to son. A thousand years may pass away, and future travellers find the descendants of Abraham watering their camels by the well of Nahor, while another Rebecca, with the daughters of the men of the city, come down, with pitchers on their shoulders, and draw water from the well;

wearing ear-rings of half a shekel weight, and bracelets ten shekels weight of gold. Visiting their tents, he will find a second Sarah, kneading three measures of fine meal, to make cakes upon the hearth, and to offer it for his refreshment beneath a tree, in the plain of Mamre; while Amraphel king of Shinar, Arioch king of Ellasar, Chedorlaomer king of Elam, and Tidal king of nations, are at war with Bera king of Sodom, and with Birsha king of Gomorrah, Shinab king of Admah, and Shemeber king of Zeboim, and the king of Belar, which is Zoar. Such wars were raging as we passed from Jerusalem to Joppa; and we once saw a circle of such kings and princes, seated on the ground, holding council, whether we should be smitten, as were the Rephaims in Ashteroth Karnaim, and the Horites in Mount Seir.

"But the antiquities to which I particularly wish to call your attention, I found in descending from Mount Sion to the valley of Jehoshaphat. I forget, whether in my letter to you, describing the antiquities in the Gulf of Glaucus, I mentioned some remarkable sepulchres hewn in the rocks there, and which I said so exactly answered the description given of the tomb of Jesus Christ, that I was convinced could I visit Jerusalem, I should find similar antiquities there. Having visited the sepulchre, supposed to have been that of Christ, I was not satisfied with its appearance. It is now

so disguised with marble, that no one can judge from its appearance of its original state. I found no rock in which it seemed to have been hewn, but its sides were of that sort of marble called verd-antique; and all the rocks of Jerusalem are a very hard limestone. Add to this, it is only forty paces distant from the spot on which they pretend the cross stood; and almost on a level with it, both being beneath the roof of the same church. Finding it difficult to reconcile the topography of modern Jerusalem, and the situation of the places shewn there, with its ancient history, I began to extend my researches without the walls. Coming down from the gate of Mount Sion, I perceived the sides of the opposite hill perforated by sepulchres, exactly resembling those among the ruins of Telmessus, in the Gulf of Glaucus, and fulfilling my prediction most completely. One of these, facing Mount Sion, so exactly corresponds with the description of the sepulchre of our Saviour, that you would be at once disposed to pronounce the hill on which it has been cut, Mount Calvary, and this, or at least one of the other tombs, the precise place in which his body was laid. It is hewn in the rock. To look into it, it is necessary 'to stoop down.' (See St. John, chap. xx. 5.) The stone, which filled its mouth, was of such size, that it could only be rolled to its place, and when once

there, would have astonished any person to find it had been removed. (Mark, chap. xvi. 3.) It is natural to suppose, that a hill for the execution of malefactors, would be placed as this is, out of the walls of the city. But there is a stronger reason to suppose the body of Jesus was placed there, and that exactly upon this mount, and no other, Joseph of Arimathea, would construct his tomb. It is this—that from time immemorial, the Karæan Jews (a sect of all others, the most correct in the observance of ancient ceremonies, and whose traditions, extending to the remotest periods, are the least corrupted) have been accustomed to bring their dead for interment to this mount. They bury them there at this hour, but having no longer the power to execute such prodigious works of art, are contented to cover the bodies of their relations with more simple works. The present inhabitants of Jerusalem know nothing more of the place; and though one of the most wonderful works of art which can be found, despise it for two reasons:

"1st.—Because it has not been considered among the number of the holy places.

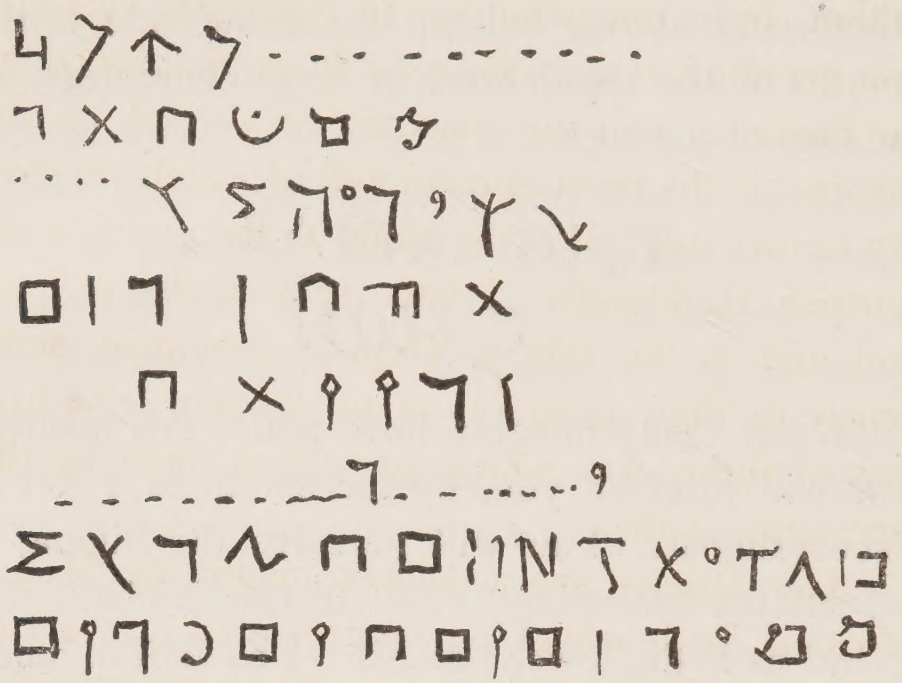
"2d.—Because it is the Jewish cemetery.

"However, that it was once entitled to more respect, I shall prove, by giving you the Greek inscription which I found on this tomb, and on

others, cut above, below, or on one side of the mouths of the sepulchres, in large characters, on the face of the rock.

ΤΗϹ ΑΓΙΑϹ
ϹΙΩΝ

"I can easily imagine how much this inscription will interest you, by the emotions I felt in discovering it. You will perceive the Sigma, is not written according to the old Greek character, ϲ; but as in the lower ages, C. I have been much accustomed to antiquities, and I know that these sepulchres are coeval with the Crucifixion; and perhaps many of them prior to it. Some of them have inscriptions in Hebrew of greater length, and others in a character which is perhaps unknown. I leave you to make more of it than I could do. I can only observe, that the most ancient method of writing the Greek Omicron was by a square, thus, ▭, as all ancient characters were angular, before mankind had learned the more difficult method of tracing curvilineals. ϕ is, I believe, the Greek Φ, and the Π is evident of itself.



"The two strongest arguments to prove that the sepulchre of Christ was one of these, is, that Joseph of Arimathea, being a Jew, must necessarily have constructed his tomb in the Jewish cemetery; and secondly, to prove that this was the place of burial of the ancient Jews, it is sufficient to have shewn, that the Karæan, a sect the most obstinate in adhering to ancient customs, have, beyond memory, buried their dead there. It is on the south side of the city, facing Mount Sion.

"These discussions are no otherwise of moment, than as they serve to shew, that the writers of the Gospels, in the most minute circumstances, respecting the manners of the age whose events they celebrate, have been entirely exact. It is for the same reason, that I beheld with very great satis-

faction, from our windows in Nazareth, two women grinding at the mill, exactly as mentioned by our Saviour; and the machine they used for this purpose, is the most ancient mill of which we have any knowledge; it is the same as the *quern* of the Scottish Highlands. I have seen it also in Lapland, and in the Isle of Cyprus—countries sufficiently in their primeval state, to afford the first view of those arts which are called forth by the necessities of life.

"The Druses are a people inhabiting Mount Lebanon, with whom our patron and preserver, the Pacha of Acre, is at war. We were escorted by his guards from Mount Carmel, over all Galilee, to Nazareth and Jerusalem, and narrowly escaped falling into the hands of the Arabs established on Mount Thabor. I had an opportunity to converse with some of the Druses, near the Lake of Gennesareth. They are the most extraordinary people on earth; singular in the simplicity of their lives, by their strict integrity and virtue. They will only eat what they earn by their own labour, and preserve at this moment the superstitions brought by the Israelites out of Egypt. What will your surprise be to learn, that every Thursday they elevate the molten calf, before which they prostrate themselves, and having paid their adoration, each man selects among the women present the wife he likes the best, with whom the cere-

mony ends. The calf is of gold, silver, or bronze. This is exactly that worship, at which Moses was so incensed, in descending from Mount Sinai. The cow was the Venus of the Egyptians, and of course the calf, a personification of animal desire, or Cupid, before which the sacrifices so offensive to Moses were held. For it is related, that they set up a molten calf, which Aaron had made from the golden ear-rings of the Israelite women; before which similar sacrifices were made. And certainly the Druses on Mount Lebanon are a detachment of the posterity of those Israelites, who are so often represented in Scripture, as deserters from the true faith, falling back into the old superstitions and pagan worship of the country from whence they came. I could not visit Mount Lebanon; but I took every method necessary to ascertain the truth of this relation; and I send it to you as one of the highest antiquities, and most curious relics of remote ages, which has yet been found upon earth.

"From the mountains near Bethlehem, the Dead Sea, with the river Jordan, appeared as if I could walk down to it in two hours. It is a most extraordinary place. I shall shew you, I hope, some of its productions. The plants were almost all withered, and the heat of the sun so great, that it threw me into one of my fevers—which alarmed us, as the plague raged both in Nazareth

and Bethlehem, and it began with such symptoms as are usually deemed pestilential. I have recovered in this convent, among the fattest friars who ever fed on the milk and honey of Canaan. You will imagine what sufferings accompany travels in such climates, where one looks in vain for shade; where the wind is hotter than the sun's rays; and where Fahrenheit's thermometer, not being exposed to either, rises to 105. Lord Keith told me, that in the tents of the English, near Cairo, it had risen to 120. An umbrella is but a mockery of woe, for the reflected heat from the ground is full as insupportable, as the direct rays of the sun.

"Besides the antiquities I have mentioned to you, on the south side of the city, Jerusalem is entirely surrounded with others, which bear no features to indicate in what age, or by whom they were left. They are for the most part of the same character; and consist of subterranean excavations, of a magnitude and beauty, without parallel. They are not like the catacombs at Naples or Rome, though the greatest part of them appear sepulchral. In riding without the walls of the city, sometimes a small aperture like the mouth of a well, at others, the whole side of a rock, cut like a quarry, with wide openings, beautifully sculptured and adorned with columns, lead to numberless chambers of different dimensions, all hewn in the solid rock, where

you may wander as in a labyrinth, and find no end to your research. The most considerable of them are the only ones to which the inhabitants have given even a name; and they are, the Sepulchre of the Virgin Mary, and all her family, of the Saints Joachim, Anne, and Joseph; and some prodigious excavations, on the north side of Jerusalem, called the Sepulchres of its ancient kings. I can form no conjecture respecting their origin, but have found them all over the Holy Land, as well as on the coast of Asia Minor. Even on the summit of the Mount of Olives are some of these subterranean works; and one there, in particular, is deserving of notice, as it differs from all the rest in being lined with a very hard antique stucco, similar to some subterranean works which I found on the Isle of Bequieres, in the bay of Aboukir, on the coast of Egypt. It is also of a very remarkable form; being a cone, or funnel, whose vertex rising to the surface of the summit of the mountain, affords a small opening to admit light, as well as the only entrance; below this hole, the sides of the cone extend to such a width and depth, that I could not determine the immense size of the cavern they contained.

"I cannot conclude this letter, already swelled to a volume (which convinces me of the impossibility of writing half I wish to add), without mentioning our travels in Galilee, by much the most

pleasing part of our journey. I know of no travellers who have visited that portion of the Holy Land, as it lies out of the usual pilgrimage of persons bound merely to Jerusalem. Our plan was to pursue the history of Jesus Christ, from his nativity to his death; following his footsteps, with the Gospel in our hands, and reading at every spot mentioned in it, the passage which had rendered it sacred. For this purpose we went first to Nazareth from thence into Galilee, visiting Cana, the Lake of Gennesareth, and even the borders of the Desert, to which he retired in his earliest years. Galilee affords the highest satisfaction, because its objects are among the features of nature, and are not liable to receive injury from the barbarous zeal of the monks. The scenery there is very grand. The Lake of Gennesareth, or Sea of Tiberias, is more beautiful than the Lake of Locarno, which it resembles; at the same time, it has that grandeur which is ever found where water of such extent is surrounded by high mountains; and hardly yields the palm to the Lake of Geneva. I had the happiness of swimming in its crystal waters; buoyed above its waves by all those emotions, which local enthusiasm, when called forth by piety as well as memory, in scenery so dignified, cannot fail to excite.

"Returning from Galilee we took a road by Mount Thabor; passing through the country, in

which his disciples are said to have plucked the ears of corn on the sabbath-day, and came again to Cana and to Nazareth. At Cana we saw, still in use, those 'stone water-pots,' which are described (John, chap. ii. v. 6.) as containing 'two or three firkins a-piece.' We then crossed the beautiful plain of Erzelon, or Esdraelon, more fertile than the richest gardens; in the midst of which Mount Thabor rises insulated to a great height, of a conic form, and offers a retreat to the wildest bands of Arab robbers. The cavalry of the Pacha of Acre were encamped in this plain, and they received us into their tents, feeding us after the eastern custom, all out of one dish, seated on the ground, and teaching us to eat pilau and sour milk with our fingers. They afterward escorted us to a fortress in the mountains, under the government of the Pacha of Damascus, our train consisting of thirty-three armed men on horseback; while our Arabs kept skirmishing, practising all those feats of horsemanship, for which they are so celebrated; firing their pieces, and engaging in sham fights round us, that the distant enemy might not count our numbers, nor be able to survey our strength.

"Some of the princes of the robbers, Arab chiefs, such as were of old time shepherd kings, came down from the mountains, to enter into a league with the general of the cavalry in the plain, and dined by our side, beneath the same tent; but

would not eat out of the same dish. The Arabs then encamped had already taken from some of the neighbouring tribes 20,000 oxen, 12,000 camels, 10,000 sheep, 8,000 asses; besides horses, prisoners, arms, &c. One hundred of the oxen have been given to the captain of our frigate, Captain Culverhouse of the Romulus, to take back to the fleet at Aboukir.

"The whole country is a continued succession of hills and plains. The former are cultivated to their tops, with uncommon industry, and covered with olive and fig-trees. The plains produce the richest harvests, except in the perturbed dominions of the Pacha of Acre. Nazareth alone seems to preserve its old character of wretchedness and sterility. The hills around being a bleak incorrigible rock; and its inhabitants in the greatest poverty; so that one would still exclaim, 'Can any thing good come out of Nazareth?' Of the Holy Land, in general, the valley watered by the Jordan, and the rich plains of Canaan, it is still but truth to style it, 'a land flowing with milk and honey.' The eye ranges over an extent of corn, wine, oil, rice, tobacco, figs, melons, and whatever the earth can yield, to fill the granaries of men, or gratify their palates. Among these are seen swarms of partridges, wild deer, wild boars, which hardly move at your approach; while the stately camel, moving with dignified step, in the long ca-

ravans, bearing wealth and power, lifts his tall head above the harvest, and seems with his eye to command immeasurable distance.——Such is the Holy Land, or rather such the only account I can now give you. Since I wrote last to you, I have visited Cyprus, being conveyed there in the Ceres frigate, Captain Russell. I have no time now to enter upon the subject of that island. I had hardly been two days back to the fleet, when the Captain of the Romulus offered us a passage to Acre. These are favourable moments for travellers in the Levant, when frigates are daily sailing in all directions, and the English name is so much respected. I can tell you nothing of affairs in Egypt till I get back; but believe things are much as they were when I sent you my last letter. Cripps unites in remembrance. God bless you.

"I must beg of you to let my mother see this letter, and also G. Stracey, if you have an opportunity, as you will see the impossibility of writing to all friends, in the midst of such fatigue and occupation."

To his Mother.

"Jerusalem, July 10, 1801.

"You who know what my disappointment was, some years ago, when Lord Berwick altered his intention of visiting Egypt and the Holy Land,

will be able to judge of my transports in arriving here. It has proved one of the happiest journeys of my life. We have travelled over all Galilee, and in Judea, and are finally come to join in thanksgiving, and in prayer, on that spot whence all the blessings of religion were derived. Here, on this holy ground, we call to mind the dangers from which we have been preserved, and the friends from whom we are separated; and cold must be that piety which, so incited, neglects a vow of gratitude for the one, and a zealous supplication for the other. My letters to you necessarily demand other intelligence than the story of our travels; even Jerusalem, interesting as it is, in its antiquities and local celebrity, will not call for your attention, so much as the welfare of your children, and the news of their destiny. It is for this reason, I have written to Otter what most interested me; and I hasten in this letter, to include what will be of more importance to you.

"I have much to say, particularly on the subject of our dear George; respecting whose health I have the happiest accounts to give. He is, what I never before saw him, all health, activity, spirit, industry, gaiety, strength, prudence. But we had an awful business. The rheumatism was cured; but one of those disorders from which few escape in this country, brought him to an alarming crisis.

He came on board his ship from Rosetta, with such a dreadful bowel complaint, the consequence of the climate, and of the medicines he had been forced to use, that we thought we should have lost him. Great care, and his *iron constitution*, with God's blessing, have saved him, and he has risen from his illness entirely a new man. All his complaints are gone; he is getting fat, and is gone to Marseilles to carry home the French prisoners, and to complete all, by breathing the fine air of that place. He is altered in every thing—even in his sentiments; and considers what has past for a long time back, so much like a dream, that he does not remember many circumstances.

"Aboukir Bay, August 6th.—You will never understand my letters, if I do not tell you they are all patch-work. I add a line when I can. I was called off after the first paragraph at Jerusalem, and the rest is added since.

"I got back to the fleet just time enough to see George before he sailed for Marseilles. We had a happy evening together, and then the French prisoners swarmed in, and filled the Braakel, like a bee-hive. He has a General, with his wife and child, in his cabin. We sailed with him half a day, till we were out of sight of the fleet. He had not a moment to himself, but was quite happy in all

the bustle, and in getting to sea, having the chief command of eleven ships in company with him. He charged me to write to you.

"We are now on board the Ceres, Captain Russell. We went to Acre in the Romulus: Captain Larmour, of the Diadem, brought us from the Braakel, back to the fleet.

"I hope now in little more than a fortnight, to give you account of our progress towards Uckfield. You have never given me your sentiments on the request I made to you respecting my marriage; and you need not be alarmed, for I am more than indifferent how it ends. I shall pass that way in returning, and before that your letter must arrive.

"And now I have to tell you, that when we have seen the Pyramids, which is what we are now upon—All is done! Then we will have no more vagaries, nor excursions: but we shall proceed in a straight line home; before this month ends, we shall, I hope, be advanced on our journey to England; and you know with what velocity we travel when once we set out in right lines. Whether I come home double or single, a Darby or a solitaire, you will find me in one respect the same,

"Your ever dutiful Son."

To the Rev. William Otter.

"Au Quartier General du Caire, le 20 Thermidor, l'an premier de la Consternation Française!

"Your last letter, dated March 21st, was as grateful as you could wish it to be; and though you say nothing material has happened, and that you have nothing to communicate but tittle tattle, you have lived enough abroad to feel the necessity of such communication. A letter from England is to us the object of long, and often vain hope, and whatever it may be, never arrives without the warmest welcome. Among so many of you, who sit at ease by your tables, we know that a letter might now and then be written. When we undertake to write, we have to persevere against fatigue, and the want of the commonest materials. No stationers expose their wares in the dusty lanes of Cairo. At this moment, half naked, and melting to the very bones, with one hand I drive away clouds of flies, and stinging insects, while the other labours for you.

"The letter you say Malthus sent, never came; nor have I heard any thing of the books on the Troade.

"You ask for a little political information, I thought I had satiated your *Combination appetites* in a former volume. Were you here, you would soon cry, 'Ohe jam satis est!' and rejoice to join

the few parties we have to discuss matters of more lasting interest. But as it is otherwise, I will enact the gazetteer, to as much purpose as the intelligence I have to communicate will allow. I was at Jerusalem when Cairo surrendered; therefore could not witness the tears of the abandoned sultanas, nor state their destiny to you.—— At present people are staring at each other in astonishment, at the terms which were granted to the French, who marched away more like victors than vanquished. They left nothing moveable behind them, except the unfortunate and beautiful girls, whom they had ravished from the harems of the murdered beys; and whom, in the true spirit of French gallantry, they deserted when no longer necessary; giving them over to the rude, though perhaps more humane, embraces of the soldiers and sailors in the British camp.——

"I cannot give you any idea when Alexandria may fall; perhaps to-morrow; perhaps a month hence. An immense force is before it, and it has been long blockaded. But that madman, Menou, is there, and who knows what he will endure, or do. An aide-de-camp came from him the other day to Lord Keith, when I was sitting with his Lord ship and General Hutchinson, in the cabin of the Foudroyant. He stayed all night, and returned by daylight, but nothing of moment transpired. It is known that they are in the greatest extremity.

They have rice in abundance; but neither wine, oil, butter, nor bread: and a Frenchman cannot live on boiled rice. Add to this, their want of water, and its bad quality. The Indian army here has orders to march, and the Albanese troops of the Vizier's army are sent for, who are generally used in storming; so that we expect an assault to be made. If the place is attacked, we have an offer to go on board Sir Sidney Smith's ship, to witness the storm. I believe I told you, my brother is gone to Marseilles with the liberated French. He convoys nine cartels, frigates and transports. I went to sea with him, and meeting the Diadem, Captain Larmour, returned to the fleet. The Prince of Wales has written to Lord Keith, to desire he may be placed in a more active ship. He has on board five hundred and sixty French troops, with about fifty officers, and General le Grange, with his Georgian damsel, occupies a part of his cabin. About fourteen thousand persons, French and refugees, are sent to France, from Cairo.

"We have now a house in Cairo. The inundation of the Nile has taken place, and the canal was opened with great rejoicings a few days ago. We are entirely occupied in parties of pleasure; going about in our barge as at Venice. Every body is our friend. The commanders of the army and the navy seem to strive who shall shew us the most attention, or contribute most to forward our

plans. Colonel Stewart lends us horses and dragoons to visit the pyramids. Colonel Holloway, commandant of Cairo, does the same for the ruins on this side the river; and offers to get any thing away for me, which I may find. General Baird invited us to his sumptuous entertainments in the Indian camp. They are on the Isle of Rouda. The Reis Effendi, the Vizier, the Capudan Pacha, Lord Keith, General Hutchinson, Sir Sidney Smith, Colonel Paget, and most of the Captains of the fleet, have been eager to do us all the service in their power. It makes our stay here so pleasing, that you will not wonder it has been prolonged.

"The Indian army under General Baird forms one of the finest military sights in this country. Their establishment is quite in the style of oriental splendour. I know not how it will answer to mix them with the other English troops; as their pay is so much higher. Even the subalterns repose on sofas, beneath fine tents, drinking Madeira and English beer; while the richest of the troops from England sleep on the sand, and have none of those luxuries. Their voyage down the Nile was charming. They came, some of them, from the cataracts; and all of them visited the temples of Dendera, &c.; teaching those dastard savages, who have so often insulted and reviled travellers, to bow down, and tremble at the British standard, and to respect its name. They have with them

persons of almost every caste in India. And it is a fact which will interest, if not astonish you, that upon my asking General Baird, whether the system adopted by Monsieur de Guignes was true, respecting the analogy between the Egyptians and the Chinese?—he replied, that some seapoys of the Brahmin caste, entering the Temple of Isis, acknowledged their god Vishnu among the mutilated idols; and would have destroyed the Arabs, for the injuries which these sacred symbols had sustained. No fact has occurred this century more worthy the attention of the historian. I am perfectly of opinion that the Chinese are an Egyptian colony, and that part of India was peopled in the same way. Therefore, their pretensions to antiquity are rightly founded; and we are not to wonder that the two first dynasties of the Chinese annals, are precisely the same with those of the kings of Thebes. If you were here, we should both be ruined; we should instantly proceed through Upper Egypt to India. I am half afraid to hint at such a project, for you will take the alarm, and suppose me already gone there. Never was there such an opportunity! Posts of British troops, at different distances, occupy the whole extent of the Nile, from hence to the cataracts. Ships from Bombay, floating palaces, are waiting to waft any traveller to the Ganges. I have been pressed much to go, and have been promised a passage home in

a frigate, by the Cape of Good Hope. At the same time, vessels are sailing to all parts of the Red Sea and Mediterranean, and we receive daily invitations to distant shores. Will you not give me then your approbation, if, having a friend who would go the world over with me, and better health than I have yet enjoyed, I listen to the dictates of duty and prudence, and determine to proceed from hence straight to Old England; to convey him safe to the arms of his longing parents, and to check rather than encourage that passion for enterprise, which perhaps I have noticed with too much satisfaction. If I ever desired to visit Upper Egypt; if, when difficulty and danger awaited the undertaking, I would have sacrificed every interest and every tie, to tread that historic soil, what must I now feel in turning back, when my foot, as it were, rests upon the threshold of a building, which contains the long-sought talisman. If I were free from my present engagement, and master of my own actions, I should deem it a disgrace; now it becomes a duty. While I have life, I would proceed; and grow grey in the pursuit of knowledge, leaving you to smile at the inconsistency with which, in my letter from Jerusalem, I told you I had done enough, when I am now raving to do more.

"I hope I have made every inquiry that you would have dictated about Bruce, the Abyssinian

traveller. There is no doubt, as to his having visited that country. The Imperial consul here knew and travelled with him. It is not long since a man died in Cairo, who accompanied him from that country; and used to confirm all that Bruce had written, by his relation. The officers from India affirm, that, in all the countries which they visited, they found Bruce a most faithful writer; and General Baird adds, that his latitudes of places in the Red Sea, are the only observations to be depended upon; and that they were of great use to the fleet. I believe his work will rise in estimation, in proportion as the memory of the man is obliterated.

"To-morrow we are going, under an escort of Janissaries, to Heliopolis. I neglect my journal in deference to the French sçavans; in the hope that nothing has escaped their active research. All Europe looks to them for abundance of discovery and refutation of error. By what we learn here, there is reason to fear the usual result *de l'accouchement des montagnes*. They seem like *chevaux de ménage*, to have kicked up a great deal of dust, without gaining any ground.

"I understand that ——— is at Malta, on his way to England. Hamilton, Lord Elgin's secretary, who was always our good friend, is here, as agent for the Ambassador. ———'s long search after the original manuscript of the Arabian Nights,

was made in vain. And it would not surprise me if he was gone home on that account a sceptic to its existence. The French sçavans searched for it all the time they spent in this country: and an Arab student from Vienna has orders to find it if possible. What will you say, if after all these staunch pointers have ranged the stubble, such a pug-dog as I should start the game, and bear it home to my masters? Toe-ho! you exclaim, and level your piece—bang!!!—we have it, snug—the whole work complete—all that has, and that has not been translated. 'One Thousand and One Nights;' or, as it is nominated in Arabic, 'Elf Leela, O Leela.' So you may tell your Arabic professors to prepare—it is no less than four large volumes in quarto. I had searched for it all over Syria, Phœnicia, and Palestine; and at last found, I believe, the only copy, among the persons who prepare and bind the copies of the Koran in this immense city.

"I regret more than I can express, the inattention I have paid to Arabic. Had I known how much time I should pass among the Arabs, I might have made great proficiency in a language which I foresee will soon be foremost in classical studies. The authors, whose works may be deemed of importance in Arabic and Persian, are more numerous than Volney, and other writers, would have us suppose. Those languages are now

taught to Philologists in Vienna, as the first necessary in their education, and will soon be prevalent in Europe.

"I wish I had time to say a few words on the antiquities I have seen. The Pyramids far, very far, surpass all I had imagined. They are every where in view, and form such features in the landscape here, as no design, engraving, or description, has yet represented. At the distance from which we now view them, they appear close to the eye. Without hyperbole they are immense mountains; and when clouds cast shadows over their white sides, they are seen passing as upon the summits of the Alps. We have procured and opened the embalmed bodies of the Ibis, those birds held sacred by the Egyptians. They seem to me to be storks; the same you saw held in such veneration in Denmark, and which, more or less, have been objects of religious respect in all ages, and in all countries.

"I do not agree with Volney on the subject of the plague; which in Egypt, I have no doubt, is indigenous. It originates in the stagnant waters left by the Nile; and all stagnant waters in hot climates produce disorders which have more or less resemblance to it. Is not this fact sufficient to prove that it rises in Egypt: viz. that when the inundation is great the plague ensues; when it is small, the plague fails? Without intercourse with

Egypt, they have no plague in Constantinople. Its progress is from the south.

"Tell Malthus, I will never write to him, till he has epistolised me. Neither will I give either of you credit for letters which do not arrive. You are both shamefully in my debt, and will run up bills beyond what you will pay, if I do not have recourse to violent measures. If they have not heard lately from me at Uckfield, I shall be obliged to you, to communicate any letters, or any part of their contents, which you may think proper, to my mother and sister; both of whom, please God, I hope now soon to see. I am looking forward to the moment of our meeting, which, if possible, will be before the ice sets in between Hamburgh and Yarmouth; or else, as soon as the Elbe opens in the spring. Strange matrimonial events may hasten or protract the day. Should I be silly enough to bring home a *rib*, it may be in the spring.

"If you have not heard of the surrender of Alexandria before this letter arrives, you may expect some very important intelligence from this country every day. At present, a report prevails, and is much credited, though I believe it originates in the Jacobin party in Egypt, that the French, with a very large force, are at sea; and will certainly attempt a landing. Our forces are very much concentrated near Alexandria; and

perhaps the country is a little too much left open towards Damietta and the east. The inhabitants of this place are in the greatest alarm in the fear of the English quitting Egypt, in which case most horrible massacre and plunder would certainly ensue from the Turks. They are ripe for insult and mischief; and in great chagrin that they were not permitted to sack Cairo. They rob wherever they can; and, the other day, shot a Frank, as he was sitting in his balcony, who now lies wounded in the room below ours. They wished to bastinado Cripps and me, because we would not descend from our balcony as the aga of the Janissaries passed by on horseback.

"Think how rejoiced we were in the change which has taken place in Russia. We know something of the present emperor. All our treasures of Siberian minerals we thought were lost for ever. But now we hear the embargo is taken off. Professor Pallas will repair his lost vigour, 'and breathe and walk again' amidst the fields of science he had abandoned. All Russia will rejoice—from the forts of Kamschatka to the forests of Poland. I hope my next will be dated nearer to England. Medals are exceedingly scarce here. I have only a few of the Ptolemies. Indeed, nothing abounds except dust, mosquitoes, bugs, and lice."

To the Rev. George Stracey.

"Pinnacle of the Pyramid of CHEOPS; being the highest and largest of those of Djiza.—August 22, 1801; Ten o'Clock A. M. Thermometer of Celsius, estimated in the shade, 29 degrees above 0.

"Dear Stracey.—Here I am! looking down upon the Delta, and the—I know not what—pyramids, plains, canals, camps, boats, palm-trees, mosques, minarets. How my brain swims, and my heart distends! Alas! the giddiness of the one, almost prohibits my fulfilling the dictates of the other.

"You will easily imagine I have now attained the pinnacle of my wishes. In communicating to you the success which has accompanied my labours, they are fully accomplished. It is a promise I have long made you, that if ever I attained this eminence, and placed my feet upon this august eternal pile, I would hail you even on the spot.

"How we shall ramble and chatter when we meet. No street in London will be wide enough for our discussions. We * * *

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"Well, what do you think of our journey? The territory we have traversed comprehends so large

a portion of the globe, that if we would visit the cataracts, which are within a few days of us, and which we are much pressed to do, we should have encountered the climates of the frigid, temperate, and torrid zones, and breathed every species of atmosphere, which hangs about the earth. We have been eastward as far as the longitude of Madagascar, and southward to the deserts of Sagûara. Our travels, since we parted, comprehend 38½ degrees of latitude, and not less than 50 of longitude, a square upon the sphere so extensive, that if we were to sail home hence by the straits of Gibraltar we should not transgress its limits.

"Political intelligence you have from other quarters, therefore I cannot spare a line for it."

"ABOUKIR BAY, Sept. 8, 1801.

"We returned to this place yesterday from Rosetta. The English troops enter Alexandria tomorrow, and we accompany them.

"In our voyage down the Nile, I had the satisfaction to discover the ruins of the city of Sais, in the Delta; which I have not yet heard the French mention. The accuracy of D'Anville guided me to the spot, and I have brought thence many curious antiquities.

"I have conversed with inhabitants of Abyssinia, who confirm all that Bruce has said in his

travels. Indeed, you would be astonished at his accuracy.

"But what will be your pleasure to hear, that after all the researches of the French to find the original MSS. of the Arabian Nights, and also the futile inquiries of ————, and the German orientalists, I procured it in Cairo, in four volumes quarto. Mr. Hammer, the celebrated oriental scholar will go to England, as he says, on purpose to translate it, and I have given him letters to Otter, &c. I have not an instant more.

"Your sincere friend."

To the Rev. Robt. Tyrwhit.

"Pinnacle of the Pyramid of CHEOPS; being the highest and largest of those of Djiza.—August 22, 1801; Ten o'Clock A. M. Thermometer of Celsius, estimated in the shade, 29 degrees above 0.

"If you find my pen wandering, or my paper blotted, you will not complain, when you perceive the giddy height on which I now stand. I have often wished to write to you; but the letters of a mere traveller are too frivolous to compensate even the tax they bear at such remote distances. To convince you, however, that a step to the clouds has not obliterated the remembrance of a duty I

feel owing to you; the few minutes I have to spare here, are at your service.

"We have many thanks to render to the French for their labours in the plains below. They have left memorials among the Pyramids, which our army will not remove. The small Pyramid is more than half open, and the Sphinx, so long veiled in heaps of sand, at length exposes to common eyes her leonine posteriors.

"The Pyramids of Saccara, in Upper Egypt, at this moment in view, will be the *ne plus ultra* of our travels. As soon as we have seen them, and examined the catacombs containing the mummies, we shall turn our faces in good earnest towards Cambridge; where we hope to meet you in health and spirits.

I reserve for moments of more tranquillity the conclusion of this letter. Many voices call me off to assist in determining, what perhaps will baffle our calculation, namely the long disputed height of this Pyramid.

"Grand Cairo, September 1, 1801.

"Vain are my wishes to write as I would wish. All is bustle and confusion. Alexandria has capitulated, and we are obliged to hasten our departure from this place, that we may make our entrance into that city with the English troops. The French are allowed ten days to settle their affairs, when

they will take their final leave of Egypt. The brother of General Hutchinson arrived here with this intelligence from the army, which he carries to the Vizier. We had heard a flying report before from some Turkish soldiers. It is said, Menou was so unexpectedly daunted by the entrance of the English ships into port, that he affected not to give credit to the news, and when they told him the English were actually there, he replied, 'It is impossible!'

"The English have used such expedition, that six regiments embarked, as soon as the treaty was signed, leaving Egypt even before the French. They are gone to Sicily, or Portugal; but it is believed to Sicily, to which place, it is said, our whole force will now be directed. General Baird remains with the Indian army to garrison Egypt.

"We have collected many things here. Among others, some Coptic and Abyssinian manuscripts.

"I have had opportunity to converse with an inhabitant of Abyssinia; the result of which conversation proves beyond doubt, that Bruce's writings are not only correct as to the observance of truth, but that few travellers have written with more veracity than he has done. This subject I will reserve for a winter's evening.

To R. Malthus, Esq.

"Aboukir Bay, September 9, 1801.

——"To-morrow, two hours before daylight, we boat it as far as the camp, and then boot it to Alexandria (quel superbe jeu de mots!), to make the grand entry with the army into the city. The English are to relieve the French guard at all the posts; and Cripps and I intend to relieve some of the French tenanting lodgings within the walls, by seizing the quarters they evacuate.

"Have the goodness to let Otter see my letter, to save me the time necessary for writing two. Do me the favour, to consider me as returning home! It is a kindness I have not yet been able to shew myself. Our ultimatum may be fixed at the Catacombs of Saccara, in Upper Egypt. We feel the attraction of Alma Mater, bringing us back like comets, in a very eccentric ellipse, to gather new force from the sun; and dart off again.

"How glad I should be, if I could tease and torment you with new systems, and the reveries of my night cap. I left some sçavans at Cairo in high discussion upon a theory born in Cyprus, matured in Palestine, and turned loose in Egypt; respecting the formation of atmosphere, by a process natural to the earth. I am ready to keep an act against you all, that the atmosphere was not

coeval with the creation of the globe, but a necessary consequence. And to put no bounds to my vanity and temerity, I engage to prove, that Light is the fluid matter of Heat in its quiescent state. To compress it in as few words as possible, that light is caloric; prevailing, but not pervading. At present, I merely confide this fact, with true parental fondness, to your care; lest hereafter any cuckolding philosopher, in these days of crim. con. should pretend to father my bantling.

"Brown the Ammonian, is bound upon a second expedition to the Oasis. He has been seen at Rhodes, and is daily expected here. There is reason to suspect from what is said here, that the Arabs cheated him; and that he never reached that country in his first journey.

"The Oasis Minor is as easily visited from Cairo, as Edinburgh from Cambridge. It is only five days' ride from Faioum, on the Lake Mæris. Alas! when talking of such things, I could wish you to consider me in any light but that of returning. There are three Oases, instead of two. That sought after by Brown, is fifteen days' journey, in the desert, westward of Alexandria.

"You are to give full credit to Bruce. We put him to a severer trial than travellers in such remote countries have experienced. General Baird brought his work from India, and I opened it in the presence of a native of Abyssinia and several English,

for two days successively; examining the Abyssinian on all points. He knew the plants, and named them from the plates alone, and in all things strictly confirmed what Bruce had written. All the French travellers in Upper Egypt give praise and credit to his work; as do the captains of the ships in the Red Sea, and the officers of the Indian army, who were as far up the Nile as the Cataracts. Indeed it is a most valuable acquisition. He is not only accurate in general facts, but in all the minute circumstances deduced from them.

"I shall bring home the 'Decade Egyptienne,' the 'Courier de l'Egypte,' with most of the papers published by the French in Cairo. They will be very amusing, if they do not more highly interest you. If you have not yet seen the 'Memoirs of the National Institute at Paris,' endeavour to get them. The work is in five volumes, quarto; but contains much curious and new research, mingled with the usual frivolity and petitesse of the French. We have taken it here in the French prizes, and perhaps I shall be able to procure a copy. It has already been lent to me by a gentleman of Smyrna.

"We go to Athens from Alexandria, and from Athens to Constantinople. I hope to be in England in the winter. Egypt is to be garrisoned by the Indian army under General Baird. Never was there a moment so advantageous for visiting this country: formerly it was at the hazard of life to

venture, after a few plants, a mile from the coast. Now all is open and safe.

"A new expedition is on foot, and it is said, to Corfu. Many of the ships are already ordered there with troops. To-morrow all Egypt will be in the hands of the English. The Grand Vizier is with his army, and Colonel Holloway, at Cairo. We were twice presented to him, and received the embroidered handkerchief usually given on such occasions."

To the Rev. William Otter.

"ALEXANDRIA, September 14th, 1801.

"As I have sent a long letter to Malthus, which you will see, it is not necessary to write much now. We are here in the hands of the French. I thought the English would have entered days ago; but the tri-colour is still flying, and will continue so for a short time. Two regiments will march out, to embark at Aboukir, after midnight, and the rest will follow as fast as the vessels can be got ready for them. Great dispute has arisen between Generals Hutchinson and Menou, about the antiquities and collections of Natural History made by the corps of sçavans. Menou has threatened him with all the effects of his fury; says he will publish him as a thief to all Europe, and finally that he will fight him on his return.

"I was at Cairo when the capitulation began. There I learned from the Imperial consul, that the famous inscription which is to explain the Hieroglyphics, was still at Alexandria. I then intended to write to General Hutchinson and Lord Keith on that subject, to beg it might be obtained for the University of Cambridge, or the British Museum, as I know full well, we have better Orientalists than the French, and a knowledge of eastern languages may be necessary in some degree towards the development of these inscriptions. News arrived in the instant of the cessation of hostilities, and I set out in haste to Alexandria. When I arrived in the British camp, General Hutchinson informed me, that he had already stipulated for the stone in question; and asked me, whether I thought the other literary treasures were sufficiently national, to be included in his demands. You may be sure I urged all the arguments I could muster to justify the proceeding; and it is clear that they are not private property. General Hutchinson sent me in to Menou, and charged me to discover what national property of that kind was in the hands of the French. Hamilton, Lord Elgin's secretary, had gone in the same morning, about an hour before, with Colonel Turner of the Antiquarian Society, about the Hieroglyphic Table. I shewed my pass at the gates, and was admitted. The streets and public places were filled with the French

troops, in desperate bad humour. Our proposals were made known, and backed with a menace from the British General, that he would break the capitulation, if the proposals were not acceded to. The whole corps of sçavans and engineers beset Menou, and the poor old fellow, what with us, and them, was completely hunted. We have been now at this work, since Thursday the 11th, and I believe have succeeded. We found much more in their possession than was represented or imagined. Pointers would not range better for game, than we have done for Statues, Sarcophagi, Maps, MSS., Drawings, Plans, Charts, Botany, Stuffed Birds, Animals, Dried Fishes, &c. Savigny, who has been years in forming the beautiful collection of Natural History for the Republic, and which is the first thing of the kind in the world, is in despair. Therefore, we represented it to General Hutchinson, that it would be the best plan to send him to England also, as the most proper person to take care of the collection, and to publish its description, if necessary. This is now agreed to by all parties. The other morning I attended the Corps of Engineers in their meeting room; and being reproached with the conduct of the English in seizing the curiosities, I replied, that they must recollect, it is exactly the part they acted at Rome; and as for Mr. Savigny, is it a hardship for a traveller, and a man of genius, to have an opportunity of visiting

England to so much advantage? They said, perhaps the going to England would be felt as a palliation, if they had not been four years absent from France. Except ourselves, hardly an Englishman has been suffered yet to enter the town; but it is completely surrounded by the British troops, and Admiral Bickerton is in the old port. The French and English sentinels are so near, they can converse with each other.

"In the mean time, the suffering inhabitants are impatient for the entry of our troops. They have been starving; and, even now, while I write, horse-flesh (would you believe it!) sells for two hundred and fifty medinas the rotoli (near a guinea a pound). With the greatest difficulty I obtained some sheep from the camp, and distributed them among the greatest sufferers. We had nothing to do, but to look at the hieroglyphics and other antiquities, with stomachs as empty and craving as the best conditioned philosophers; no indigestions to cloud our intellects—all light, clear, and incorporeal faculties! If I should hint, that Cripps and I in fond remembrance represented occasionally to our imagination a College dinner, do not tell tales! The Turks during the siege died of hunger, forty and fifty in a day. Provisions were not only at high prices, but could not be bought. Wealthy families saw death staring them in the face, and wished to die to end their miseries sooner. Among

these was the family of the Imperial consul. A calf's head sold for six guineas—a small pullet fifteen shillings—a single egg seven-pence half-penny—and this, in a country where the price of eggs is one dollar, or four and six-pence per thousand, at Damietta, and other places. The English will not suffer provisions to be brought in, till the French are gone.

"The moment this business is ended, I shall embark for Athens, in our way to Constantinople, and to England. Lord Keith goes upon the new expedition; which is said to be destined for Corfu. Admiral Bickerton remains to command the vessels on the coast, &c. General Baird, with the Indian army, will garrison Egypt. Mr. Hammer, known all over the Levant for his skill in the oriental tongues, came with us from Cairo. He is gone to England with his friend Sir Sidney Smith. I gave him a few lines to you, written at a moment's notice; and also a letter to Lady Uxbridge. —— will be frightened out of his wits, not only because Hammer knows his ignorance of Arabic; but because England will find in Hammer one of the greatest scholars in Turkish, Arab, Persian, &c., which they have yet seen. One object of his journey to England is to translate the manuscript found at Cairo, of the Arabian nights, not one quarter of which is yet known to us."

To the same.

"Isle of Zia, off Cape Sunium,
October 25, 1801.

"While Antoine is cutting up an old goat, to fry some chops in an earthen pan, for Cripps's breakfast, I will make a sketch of the luxuries we enjoy in Greece. It may cool your ardour for exploring these seas; for when I think of the enthusiasm with which I once planned such a voyage, it seems as a dream that vanished with the moments of repose. Danger, fatigue, disease, filth, treachery, thirst, hunger, storms, rocks, assassins, these are the realities! Will you believe, that even I have repented the undertaking? You once said all my letters begin with disasters. How can it be otherwise? I must shew things as they are. In my fourth decade, I no longer scatter roses among thorns.

"I call you to witness—was I always at sea a coward? Now the very sight of it sickens me to the heart. It has handled me so roughly, that I shall never face it like a man again. Coming from Egypt, we tasted a tempest in a Turkish sixty-four; and since were blown upon some rocks on the south of Naxos, to amuse ourselves with drying our rags, naked, upon a desert. But suppose it all goes well, and you have fine weather, and so on. Lice all over your body; lice in your head;

fleas, bugs, cock-roaches, rats, disputing even to your teeth, for a crust of mouldy biscuit full of maggots. What's the matter now? 'Sir, we are becalmed!' Well, what of that? 'The pirates have lighted their signals, within two miles of us, if a breeze does not spring up, we are lost!' A breeze comes! it gathers force—it blows fresh—it whistles—it roars—darkness all around—away goes the fore-sheet—the sea covers us—again a calm—again the pirates—Mercy! mercy!

"Lord Keith left Egypt before we did; but the Capudan Pacha sent us, in a Turkish sixty-four, to Rhodes and to Cos. At Cos, we hired a Cassiot boat, for four hundred and fifty piastres per month, open, and built like a bean-shell. A pretty vessel, you will say, after the picture I have given you, to navigate these seas, in such a season. But Athens! —Could we return without seeing Attica? You would have rigged one of Halliday's canoes, sooner than have been guilty of such neglect. If it had not been for Cripps, I should have turned back from Patmos. J'ai le cœur gâté; de sorte qu'il n'existe plus; ainsi ce que je ferai, je ne puis m'empêcher de faire.

"Do you remember the little boat, in which, many years ago, we embarked from Lynn, to fish in the Roads; and night coming on, we all crept into a place where they kept their nets! Exactly such a vessel is now under our command; in which

I squat at this instant, and scribble to you upon my knees—the heavens our canopy, and the sea our couch. Cripps is Capitano—I am Noster Huomo, as the Italians call the boatswain, in a dirty night-cap—and Antoine is Scrivano, without being able to write or read.

"To-morrow we cross over to a village, distant only twelve miles from this port, from whence it is only a journey of ten hours to Athens. When we arrive there, I will finish this letter. Our plan is to see Athens and Corinth, and then to cross the seas again to Smyrna; from whence we go by land to Constantinople. I dread the voyage; but when I consider that Ulysses escaped in a boat of this kind, after so many tempests, in the same seas, and that Columbus sailed to America, in another not much larger, I gather a little courage; but these are all consolations while I sit in port—when Neptune rages, I shall squeak again. If Cripps were safely restored to his parents, I certainly should be very indifferent as to the rest.

"I have obtained treasures since I last wrote to you, in the way of medals and manuscripts; but particularly of the latter. Our deeds with the monks of Patmos, we will talk more of, when we meet. It is enough to say, that I rescued from the rats and the worms in the library of the convent, many valuable works. I have a Greek MS. on vellum, of an author, I believe, unknown; a Greek

lexicon, of great antiquity; bearing the title of the 'Lexicon of Saint Cyril, of Alexandria,' written in the same characters as the work. Saint Cyril was Bishop of Alexandria, in the reign of Theodosius the Second, successor of Arcadius; and distinguished himself by his persecution of the Jews in that city, in the year 415. In the year 431, he presided in the Council of Ephesus, against the Nestorians. Arcadius founded the library and convent of Patmos; and as Saint Cyril had great influence at the court of his successor Theodosius, his lexicon might have been presented, among other gifts which the library received from Constantinople at that time. If so, the Patmos lexicon is 1386 years old, at least; and, therefore, very good authority in establishing the purity of the Greek language: Wheler, in his travels, mentions having seen such a lexicon, in the library of a convent, at Mount Pentelique, with which I hope to compare the Patmos lexicon, in a few days; as since Wheler's time, no travellers have been to interrupt the slumbers of the monks there, or to open their manuscripts. There is one thing to be observed; if the word Ἅγιος is to be translated *saint*, Cyril could not obtain that epithet till long after his death. But, I believe, it was usual to distinguish eminent prelates and pious men, by that epithet, in all writings; not with the interpretation of *saint*, but *holy*, as ἅγιον ξύλον, the *holy cross*."

"ATHENS, October 31, 1801.

"We have been here three days. We sailed into the port of the Piræus after sunset, on the 28th. The little voyage from Cape Sunium to Athens is one of the most interesting I ever made. The height of the mountains brings the most distant objects into the view, and you are surrounded by beauty and grandeur. The sailors and pilots still give to every thing its ancient name, with only a little difference in the pronunciation: they shew you, as you sail along, Ægina, and Salamis, Mount Hymettus, and Athens, and Megara, and the mountains of Corinth. The picture is the same as it was in the earliest ages of Greece. The Acropolis rises to view, as if it was in its most perfect state: the temples and buildings seem entire—for the eye, in the Saronic Gulf, does not distinguish the injuries which the buildings have suffered; and nature, of course, is the same now, as she was in the days of Themistocles. I cannot tell you what sensations I felt—the successions were so rapid—I knew not whether to laugh or to cry—sometimes I did both.

"Our happiness is complete. We have forgotten all our disasters, and I have half a mind to blot out all I have written in the first part of this letter. We are in the most comfortable house imaginable, with a good widow and her daughter. You do not know Lusieri. He was my friend in Italy many

years ago. Think what a joy to find him here, presiding over the troop of artists, architects, sculptors, and excavators, that Lord Elgin has sent here to work for him. He is the most celebrated artist at present in the world. Pericles would have deified him. He attends us every where, and Pausanias himself would not have made a better Cicerone.

"Athens exceeds all that has ever been written or painted from it. I know not how to give an idea of it; because having never seen any thing like it, I must become more familiar with so much majesty before I can describe it. I am no longer to lament the voyage I lost with Lord Berwick; because it is exactly that which a man should see *last* in his travels. It is even with joy that I consider it as perhaps the end of all my admiration. We are lucky in the time of our being here. The popularity of the English name gives us access to many things, which strangers before were prohibited visiting; and the great excavations which are going on, discover daily some hidden treasures. Rome is almost as insignificant in comparison with Athens, as London with Rome; and one regrets the consciousness that no probable union of circumstances will ever again carry the effects of human labour to the degree of perfection they attained here.

"In all this satisfaction I must lament the plan

pursued by the agents of Lord Elgin in this place. Under pretence of rescuing the arts from the hands of the Turks, they are pulling down temples that have withstood the injuries of time and war and barbarism for ages, to adorn a miserable Scotch villa.* The fine bas-reliefs of the Parthenon are embarking for Constantinople, and Minerva blushes for the asylum to which her altars are to be conveyed. We have already changed the plan of our return, and as soon as we have visited Corinth, Sicyon, Argos, Megara, and Eleusis, we shall set out by land for Thessalonica. In our route we shall pass by Marathon, Thebes, and the Straits of Thermopylæ, through all the north of Greece and Thessaly, into Macedonia; by which means we hope to reach Constantinople sooner, and as we shall traverse a country that travellers have rarely explored, we may find something yet unnoticed to give a relish to the journey. Lusieri is just returned from an excursion into Arcadia; which he describes as exactly in its ancient pastoral state; the paradise of Greece, and full of the richest sources of painting and poetry. 'Scenes,' he says,

* It is pleasing to reflect, that one ground of Dr. Clarke's lamentation has proved to be erroneous; and whatever difference of opinion may still exist with respect to the propriety of the spoliation here deprecated, there are few, we believe, who are not disposed to rejoice, that the fruits of it are now permanently deposited in the British Museum.

'in which he could forget his own country, and the whole world.' The account he gives of it, makes us wish to visit it; but, in this manner, when should we see England again? Let the pipe of the shepherd gladden the valleys of Arcadia, as we draw nearer to more welcome vibrations. The twang of a college-bell, would, at present, sound sweeter in my ears than the song of the sirens.

'Ah! why did fate his steps decoy
In stormy paths to roam,
Remote from all congenial joy?
Oh take the wanderer home!'

"We have paid a visit to poor Tweddel's grave. He is buried in the middle of the temple of Theseus; and as nothing but a heap of earth covers him, we are endeavouring to protect his remains by a more decent and worthy sepulchre. We shall cause his body to be laid deeper than it now is, and place over it a simple, but massive covering of Parian marble, with an inscription, containing merely his name, age, and country. I will write to you again, as soon as we arrive in Constantinople."

To the same.

"Summit of Parnassus, December 15, 1801.

"It is necessary to forget all that has preceded —all the travels of my life—all I ever imagined—

all I ever saw! Asia, Egypt—the Isles—Italy—the Alps—whatever you will! Greece surpasses all! Stupendous in its ruins! Awful in its mountains!—captivating in its vales—bewitching in its climate. Nothing ever equalled it—no pen can describe it—no pencil can portray it!

"I know not when we shall get to Constantinople. We are as yet only three days distant from Athens; and here we sit on the top of Parnassus, in a little stye, full of smoke, after wandering for a fortnight in Attica, Bœotia, and Phocis. We have been in every spot celebrated in ancient story—in fields of slaughter, and in groves of song. I shall grow old in telling you the wonders of this country. Marathon, Thebes, Platæa, Leuctra, Thespia, Mount Helicon, the Grove of the Muses, the Cave of Trophonius, Cheronea, Orchomene, Delphi, the Castalian fountain—Parnassus—we have paid our vows in all! But what is most remarkable, in Greece there is hardly a spot, which hath been peculiarly dignified, that is not also adorned by the most singular beauties of nature. Independent of its history, each particular object is interesting. Attached to that enthusiasm, which imagination, or memory, excites in its full force, it becomes a scene of adoration.

"We came to-day from Delphi. To-morrow we descend towards the Straits of Thermopylæ, and hasten forward to the vale of Tempe, and to

Olympus. We have toiled incessantly, and I hope not in vain; for we have made many discoveries, that have escaped less industrious travellers. Of these, it is impossible to tell now. I have much to say to you, in little space, and with little time, in great fatigue, and with an unpleasant consciousness of not having written to Uckfield, since I left Egypt.

"Our journey to the Morea answered all our expectations. This has surpassed them. We have no longer any complaints to make. We ride on fine horses, in the finest country in the world, and with weather such as you would be proud of in summer.

"But what will you say to the acquisitions I have made for the University of Cambridge: the tomb of Euclid, and the colossal statue of the Eleusinian Ceres, from her temple in Eleusis, the known work of Phidias, and the gift of Pericles? We have freighted a ship from Athens, with antiquities; but it would fill a volume to tell you the difficulties I had to encounter. Lord Elgin had all his agents and artists in Athens, to pull down the temples, for materials to adorn a Scotch villa. Acquisitions for others were even prohibited; and I had to fight through the intrigues of a herd of rascally Greeks, the obstacles arising from a thousand causes, from expense, from bad air, from want of every necessary ma-

chinery, and last, and greatest, from *consular* chicanery, and *diplomatic* jealousy. But they are bound for England, and I breathe freely.

"First of all, I have to thank Cripps, without whom I could have done nothing. And the expense of conveying to England the enormous statue of Ceres, after I had obtained it, he has taken upon himself, by his own desire. The tomb of Euclid (you will hardly credit it) I bought of a consul, from under the very nose of the ambassador's chaplain, and his host of Gothic plunderers.

"The removal of the statue of Ceres has been attempted by the French, upon a former occasion, without success. The Eleusinians also relate, that once being brought to the shore, she returned back to her station, by a miraculous flight, like the virgin of Loretto. —— had, for once in his life, a flash of taste, and wrote to the ambassador to remove it, as I have since learned, but they gave it up in despair. At last come two *demi-semi-travellers,* from Jesus College, Cambridge, and whip it off in a trice. I'll tell you how it was done.

"After we returned from the Morea, I found the goddess in a dunghill buried to her ears. The Eleusinian peasants, at the very mention of moving it, regarded me as one who would bring the moon from her orbit. *What would become of their corn,* they said, *if the old lady with her basket was removed?* I went to Athens, and made application to the Pacha,

aiding my request by letting an English telescope glide between his fingers. The business was done; the telescope, and the popularity of the English name at present in Turkey, determined the affair; and leaving Mr. Cripps in Athens, I set out for Eleusis, attended by a Turkish officer, the *Chogodar* of the Pacha. But how to move a statue, weighing sundry tons, without any wheeled machine, ropes, levers, or mechanical aid?—I made a triangle of wood, so—

(Here he gives a description of the machine:)

on which I laid the goddess, with her breasts upwards, and by means of cords made of twisted herbs, brought from Athens, and about sixty peasants, she vaulted into the Acropolis of Eleusis, and from thence to the sea-side, and at length into our little *Cassiot* vessel; moving the space of a mile, almost as fast as a snail.

"Behold the goddess then bound for England, and touching at the Piræus, to take leave of the Athenians.

"The statue of Ceres is entire to the waist, being originally, as it is now, a bust; but of such enormous size, that I know not where the University will place it. On her head is a coronet, or basket, adorned with all the symbols of her mysteries. Her hair is bound with fillets, and her breasts are crossed with bands, supporting in front the mask, described by

D'Hancarville and Montfaucon as found on the Greek vases.

"The tomb of Euclid consists of a single column of marble, exactly answering the description given by Pausanias of the tomb of Epaminondas, at Mantinea, in Arcadia. It contains a bas-relief, representing Euclid in the long robe, which the Greeks in their sculpture particularly adopt to distinguish the philosopher, with his scroll in his hand; and above, this inscription:—

ΕΥΚΛΙΔΑΣΕΥΚΛΙΔΟΥ
ΕΡΜΙΟΝΕΥΣ

"It is more interesting in shewing that he was a native of the town of Hermione, in the Morea; and may account for his having founded the school of Megara. But here you have the start of me, for I know nothing of his life, and am only occupied in thinking how interesting such an antiquity must be for the University of Cambridge, where the name of Euclid is so particularly revered. We have many things besides: the statue of Pan, that was in the grotto of that deity in the Acropolis, at Athens; part of a bas-relief from the Parthenon, the work of Phidias; a whole column of verd antique, from the temple of Minerva Polias; and many other bas-reliefs, inscriptions, &c. I have collected above a thousand Greek medals, bronze,

silver, and gold; of plants I will not now speak. The manuscripts I have already made you acquainted with. Our minerals we completed in Constantinople, and have hardly found any since.

"In the Morea I obtained several Greek vases, which will be a discovery highly gratifying to Sir W. Hamilton, who had before great reason to believe that these vases were found in Greece, by a specimen brought from the isle of Milo, by Messrs. Berners and Tilson. I have enclosed for you and your friends, two or three crocuses, which I plucked in the plain of Marathon, for the express purpose of sending you, in a letter, to England. At Delphos we found several inscriptions, which I believe have not been known to travelle Orchomene many more, and very interesting.

"We have hardly a rag to our backs, and know not how we shall make our wardrobe hold out to Constantinople. Clean shirts upon Sundays, like the Russians, and coats out at elbows. As for Antoine, he is dressed in the blankets of the Albanians, and perhaps, the best off of all; your Macedonian raiment laughs at a modern frock. Cripps has let his beard grow these six months. I want no such marks of *sanctitude*. Certainly, you would not recognise either of us. We have just heard the news of a general peace, so we shall abbreviate our journey, by a cut through France, and a visit to Paris.

"I know you will pay heavily for this letter, and that is perfectly indifferent to me. If you will make me write, you should be taxed to help government to patch up accounts at the end of the war. The tomb of the Athenians still remains in the plain of Marathon, as well as those of the Thebans at Cheronea. (We found the tomb of Hesiod, at Orchomene, and of the Spartans, in the defile of Thermopylæ. This note I have added since.) The little dog you left with me, is with us still. But I lost the most beautiful animal in Thebes; a dog like a lion, that I had brought from the temple of Esculapius, in Epidauria, in the Morea. He was my companion by day, and our guard by night. The thievish Thebans decoyed him, and I saw him no more. I cannot see to write more. Our little cabin is filled with smoke, and my eyes stream with tears of acknowledgment for a fire so near the seat of Apollo. Parnassus affords us sensations at our fingers' ends, to which we have long been strangers. Adieu! God bless you! Cripps sends many earnest wishes for a speedy meeting."

"LARISSA, in THESSALY, Dec. 22, 1801.

"Olympus in view, and so covered with snow, that I fear we shall not be able to gain the summit. The Peneus roars under our windows, swelled with the late rains, and as muddy as the Nile.

Things are not so much changed in Greece as is believed. The names of places remain. It is our manner of pronunciation that makes the modern appellations new. Traditions remain worth notice. A peasant told me this day, that the first voyage attempted by sea, was made from Allos, a little port in the plain of Crocius. What a curious relic of the Argonautic expedition from Thessaly! They also boast of having been the first people who tamed and mounted horses. We did not find the hellebore upon Mount Œta, nor can conceive what Tournefort means by his manna tree, in the isle of Syra. To-morrow we go through the vale of Tempe, pronounced *Temba*, by the moderns. The Anacharsis map of the defile of Thermopylæ is not worth a *sous*. That of Platæa is worse. I found the tomb of the Spartans, as I can prove to your satisfaction; and what gratifies me much, I discovered the ruins of the city of Tithorea, hitherto unknown, and found inscriptions to prove the truth of the discovery. I obtained some good medals here."

To his Mother.

"Summit of Parnassus, in ice and snow, Dec. 16, 1801.

"I am well aware what a length of time it is since I wrote last, for in my voyage from

Egypt, I had no opportunity to send a letter to England; and look what paper I now use. The pleasure of dating a letter to you, on the very pinnacle of Parnassus, induces me to venture a few lines by a doubtful road, though I must add, that nothing but the date was written there. I am now at Salonichi, the ancient Thessalonica, in Macedonia, still on my road to Constantinople; having travelled over all Greece and Thessaly, and have only to say we are both well, for I have no pleasure in writing, until I can get news from Uckfield, and know how you all are; which I hope to receive upon my arrival at Constantinople, within twenty days from this time, and it is now the 30th of December.

"I wrote a long letter to Otter, which I am sure he will shew you, though it contains nothing that will be interesting to you, as it is all about antiquities, and such sort of trumpery.

"The news of the peace has just reached us, and we shall by that means be able to shorten our road home, and go through France.

"After I arrive at Constantinople, the intercourse between us will continue with less interruption, and we shall often hear from each other, though I hope I do not deceive you or myself in saying that we shall soon be in England. We are pursuing now *a direct road home,* and there will be nothing to call us to the right or the left; no more Parnassian

hills, Arcadian vales, or plains renowned in song. We shall pass the stupid marshes of the Danube, and the fields of France, like the flash of a meteor. Do you recollect the letter you once received, which began at Naples, and ended within forty miles of Uckfield?—such a letter I hope soon to send you.

"I have had no return of my fever since I left Jerusalem. It took leave of me upon my arrival in the convent of the Holy Sepulchre.

"Mount Olympus is in full view before us, from this place. They shew here the stone pulpit in which St. Paul preached when he visited Thessalonica."

To the Rev. George Stracey.

"THESSALONICA, Dec. 30, 1801.

"Dear Stracey,—What a length of time, and I have only received one letter from you! I know not your address, therefore, am forced to send this under cover to ————, and even his I have forgotten, so it will be directed to his brother.

"We have travelled over all Syria, Egypt, Greece, Thessaly, &c., and are now in Macedonia, on our way to Constantinople. It would be absurd to give you our travels in detail here, and even impossible.

"When I have time to write to you, I am too fatigued; and when I am not fatigued, I have not time. And this you will readily imagine is the usual event of travel. I have often wished to make you acquainted with the important acquisitions we have made. From the monastery of the Apocalypse in the isle of Patmos, I procured some Greek manuscripts; one of which appears a work of Socrates, or of his disciples, that has not yet been known. I have also obtained in Egypt, a complete copy, in Arabic, and I believe the only one known of the 'Elf Leela, O Leela;' or, 'Thousand and One Nights.' You know the translation we have from the French, does not contain one fourth of the original work. It is in four volumes quarto. Mr. Hammer, who went with Sir Sydney Smith to England, has promised, and, indeed, desired to translate it for the public.

"I have a Greek manuscript of St. Cyril of Alexandria, and several Greek works in manuscript on music and poetry.

"The number of cases I have sent to England amounts to seventy-six. They are all well filled. I have above one thousand Greek medals, in gold, silver, and bronze; above six thousand foreign plants; a very large collection of minerals, made in all the different regions of our travels; a great number of insects, &c. Drawings, maps, charts, plans, inscriptions, are among the rest.

"I hope it will not be long ere we meet, as we go from Constantinople to Vienna, and thence through France, by the way of Paris to London."

To the Rev. William Otter.

"CONSTANTINOPLE, Feb. 15, 1802.

"We came by land from Athens, a route hitherto unpractised by literary travellers. The long dreary tract of Thrace made us often sigh for the shores of the Bosphorus, though we now more eagerly long for the banks of the Danube. We expect every day to begin our journey over Mount Hœmus to Hungary, and have already heard that the troops of Ali Pacha have retired towards Jassy; but Lord Elgin thinks it better we should wait till the hordes which have long infested the road have disappeared; and profit by the opening of spring, which takes place here in the beginning of March to set out for Vienna and Paris. The disorders will hardly be greater than those between this place and Salonichi; we passed one night upon the ashes of a town newly burned, and at that moment in the hands of the rebels.

"We are now in the midst of the balls and masquerades of the Carnival, as you may recollect we were at the same period last year. Cripps, the Pro-

teus of the festivity, assumes as many shapes and dresses, as there are partners for him in the dance.

"I cannot imagine to whom it is I am indebted for the paragraph in the papers. It first appeared in the Frankfort Gazette, dated Paris. Since, it has been transported, with various modifications, to other places, and lastly I find it in the *True Briton*. Sometimes my name is written *Clark*, and others *Klarke*. I have no other objection to such newspaper celebrity, than that I am always lugged in at the tail of Mr. Hammer, which makes me believe that ——, whom he accompanied home, has made use of my name, that it might not appear a puff solely for Hammer, and so be attributed to him. I gave Hammer a letter, written in great haste, at Rosetta, to you, just as he left us, to join Sir Sidney, and hope you will do him the honours, at Cambridge. He is the greatest Arab scholar we have. As for my *confirming his observations on the plain of Troy*, it is rather a sweeping puff, for he has no observations on that subject but those I gave him, and I believe never was there. They allow him also credit for having discovered the MSS. of the Arabian Nights, which is a discovery he was never able to make; nor would he believe I had done it, till he saw the work in my hands, and has promised to translate it. He wrote to me from Malta to renew his offers, and begged I would send the MSS. to England. The paragraph in the *True Briton* must have been inserted by him-

self, as it is not English, but evidently the composition of a foreigner.

"Well, our long journey is drawing to a conclusion! You will find it has wrought greater changes in me, than you will imagine. Whether for the better or worse, you must judge. For these last eleven years, let me ask you, where have I once been *still?* It is time the *moving* principle should cease. A man in his fourth decade, has lost much of that restlessness which perpetually attaches him to external objects, and begins to look within himself, to see how the list of his impertinences will sum up at last. Sometimes transitory sparks, the volatile indications of expiring fire, stimulate for a moment a disposition to counteract the *vis inertiæ*; but they vanish, and the residium consists of those decomposed principles which baffle human synthesis.

"In examining the extent of our travels by Mercator's chart, I find they comprehend no less than 45 degrees of east longitude, from the meridian of Greenwich to that of Cape St. Mary, in the isle of Madagascar, and 38″. 30. 30. of North latitude. We have visited three of the four quarters; Europe, Asia, and Africa; and certainly in Asia, the tract we passed over comprehends no small field of inquiry. The globe offers very little variety of climate, to which we have not been exposed, and in the examination of its productions, we have the satisfaction to hope, that you will neither reproach us with idle-

ness nor neglect. In the journey home, we expect to lounge a little, as the objects it will present, demand neither painful nor laborious research. I will now tell you what plan I have chalked out for that journey. The intelligence I have collected respecting the plain of Troy, will be interesting to you; I am assured it will be interesting to others: be that as it may, I shall not bring to England an indigested mass, because I do not think its atmosphere will be favourable to its future solution. For this reason, I shall occupy myself in the road, at *caravanserais*, and in dull post-houses, in putting together a confirmation of what others have discovered in the plain of Troy, and a series of arguments upon the truth of the story of the war; because I think the identity of the place, cannot continue an object of dispute; *malgré* the insane reveries of Bryant. Some new discoveries, of course, I hope to offer; and among these, the mound of the plain, with the tombs of Ilus, and of Myrinna; New Ilium; the real character and topography of Gargarus; the source of the Simois; and the characteristic phenomena of the sources of the Scamander; the temple of *Jupiter Liberator*; antiquities, inscriptions, and some remarkable collateral evidences respecting the event of the war of Troy, considered abstractedly, with respect to Homer.

"First, I have to thank you and Malthus beyond all measure, for the books you sent me. They were

not given to me till my return here, long after my visit to Troy, but they are *welcome*. 'C'est l'embarras de richesse,' as Morritt says, in his List of Believers, for I have such an anecdote for you. It is now two days since our ambassador sent for me into his bed-room, and after a long preamble, told me that if any thing he could do to forward my inquiries respecting the plain of Troy would be of use to my work, he begged I would name it; that he would send artists, or engineers, expressly to the Dardanelles, to take any drawings, or make any observations I might require. As we had never before experienced other than obstacles from that quarter, I stared, and felt uneasy how to reply; at length I told him, that if such written notes or queries would *serve to guide him* in visiting that country, as he required of me, for my use and advantage, I would put together a series, from which he might derive what amusement he pleased. However, he still acted the Mæcenas; and, I suppose, expected a full eulogium from this rebellious pen. I have it ready: at least, these words contain the whole acknowledgment.

'Timeo Danaos, et dona ferentes.'

"The letter from Malthus I found here, with the books, after my arrival from Egypt and Greece. It had been here almost a year. This will account for my not having answered it, which I shall now do. Morier is a very good fellow, and was always

sincere and friendly to us. I suppose you have seen his pamphlet on the campaign with the Vizier's army. We play at chess together, till we greet the rising sun; as you and I, in other days, did at backgammon. Hunt is in the Archipelago, and Hamilton at Thebes, in Upper Egypt. Carlyle long ago gone to England.

The liberating of the Maltese slaves, some of whom had been forty years in chains, is a forlorn hope of the Capudan Pacha's, to do away the evil impression made by the murder of the Beys. It was patched up between —— and him. I was at the palace when these poor men came to thank the English nation. It was an affecting sight. Many will return to their relations, after being thought dead for several years. At present the English have a presumed popularity with the Turks, but this you may depend upon, from the moment the French ambassador arrives at Constantinople, adieu to all union between England and the Porte. Our merchants are well aware of this.

"We continue our ride towards Vienna, on horses. Perhaps we may get a carriage at Bucharest; if not, it will be a famous exertion of equestrianship, from Athens to Vienna.

"Are you not impatient to see the figure of the Eleusinian Ceres? It was shipped the other day at Smyrna, before a great concourse of people. If I had not used precaution, diplomatic intrigue would

have deprived me of the honour of sending this figure to Cambridge. Our ambassador has more than once expressed his chagrin, at our having, as he says, plucked the jewel from his crown."

To the Rev. Robt. Malthus.

"CONSTANTINOPLE, March 16, 1802.

"I have two letters of yours to answer, and what will you say, when I assure you they are the only productions of your pen I have received since I came from Petersburg. The first of these arrived with the packet of pamphlets on the Troade. It bears date March the 1st, 1801. Your second letter is dated December 25; I received it a few days after the other. An illness, the effect of the climate, which brought me to extreme danger, and from which I am not yet sufficiently recovered to leave the house, prevented my answering both.

"I have just ended a long letter to Pallas, and I gave him your queries respecting the peculiar checks to population among the Nomades. Pallas is getting old, but his faculties are in their full force, and he is the most communicative sçavant I ever saw. He is troubled with a gay wife. We lived the summer in his house, and there was hardly a day that he did not instruct me in some new fact, or give me original papers, maps, and drawings. We left our carriage

with his wife (as for him, and it will afford you a trait of the good man), he would accept of no recompense, nor any other memorial than my old round hat, which I had worn the whole journey from Cambridge; because, he said, 'As I lounge in my vineyards at Sudâk, it will fill my head with English ideas; and perhaps impregnate my brain with the enterprise which spurred its owner from the frontiers of Finmark, to the mountains of Caucasus.' I can give you no idea of their hospitality; it was a continued feast, intellectual as well as sensual. When we left them, they provided us with beds of fine red leather, sheets, provisions, and a new collection of comforts and necessaries for the voyage.

"The manuscript you mention is indeed a great acquisition. Hammer had promised to translate it. It is in four volumes, or cases, in quarto, and the Arabic, in translation, generally augments to double its original bulk; as no other can render the extraordinary conciseness and masculine brevity which characterizes that language. Viewing the mass of science it contains, its importance as an avenue to all the oriental languages, among which it appears as a venerable tree overshadowed by the multitude of its branches, it is to be lamented, that in our schools and universities, it has not been rendered an essential part of education.

"But I have such a collection of interesting manu-

scripts, that their mere names cannot be indifferent to you.—

"In Greek, I have the Works of Plato; the Lexicon of St. Cyril; a volume of Greek Poems; and two works on Ancient Music.

"In Arabic, the 'Arabian Nights,' or 'Elf Leela, O Leela; the 'Delail il Hairat;' the 'Insarf,' or Arab Grammar; the 'Koran;' Arabic Poetry; and the famous Astronomical work of 'Olug Beg.' Also the History of Noureddin, Prince of Aleppo, during the Crusades; and Salaheddin, or Saladin, by Schehabeddin; a most valuable MS. in 4to.

"In Persian, the whole of the Works of Saadi, the Persian Milton; containing, besides his Gulestan, or Garden of Roses, many works never translated; the Persian Prosody; the Persian Martial; from which it seems some of the Epigrams in the Latin Poet were derived; the works of Bidfai, or Pilpay; containing the Fables and Apologues known afterward to the Greeks under the name of Æsop; the 'Chosen History of Mohammed Kaveeni,' from the creation, to the time of the caliphs and scheiks; Tales, Poems, &c.

"In Turkish, the Marvels of the Creation, a copy of which is in our Public Library, at Cambridge, as one of the most rare and ancient productions of oriental literature. I believe the Cambridge copy is in Arabic. Mine contains the course of the Nile from its sources, which the author places, with

Ptolemy, in Africa, in the Lunar Mountains. The Rury Nameh, or Equinoctial Tables. Sentences of the Mohammedan Law; religious works, &c.

"In Coptic, a copy of the Four Gospels, as preached by the earliest propagators of Christianity in Egypt; and some other MSS. the list of which is not now by me.

"In Abyssinian, a copy of the Gospels, brought from thence by one of their bishops, a Negro, to Grand Cairo, with other MSS.

"In Hebrew, a beautiful and useful MS. if I may not be allowed to say important. It is a copy, in folio, on vellum, of the Bible of the Karæan Jews, a sect become extremely rare; and established, under the protection of the late Empress of Russia, on a high rock, in the Crimea. You know they differ from the other Jews, in the superior purity of their traditions and annals, and in having kept their copy of the Bible, from the books of Joshua, free from the interpolations and corrections of their Rabbis. Pallas succeeded in getting it for me, after I had left it in despair.

"I have also a Greek copy of the Gospels, of the highest antiquity, on vellum, a MS. brought from Greece to the Crimea, at the first introduction of Christianity there.

"It is vain for me to attempt to tell you now the rest of our acquisitions. What will be your surprise, when I state the number of cases that belong to me

only, at seventy-six? It is enough to alarm me as I write. Those of Cripps are equally numerous; and I may with confidence hope for your approbation of our labours, when I shall prove to you, that during the time we have been absent, we have sent home more literary treasures, than any travellers, employed by kings and governments, and assisted by all the power and riches of their patrons, have yet done. Such parties were also more numerous than ours, and by employing more time in their researches, endured less fatigue, were exposed to less danger, and enjoyed better health. Do not accuse me of self-encomium. I write it as a confession to a friend, who, if I die, may know what we have been doing, and render justice to the virtues and enterprise of my excellent companion, in praise of whom I can never say enough. These cases contain minerals, plants, manuscripts, books, medals, inscriptions, vases, marbles, and other antiquities; maps, plans, pictures, seeds, models, costumes, and utensils; and in every article, there are some discoveries, which are yet new to the world; particularly among the minerals and plants. We regret the time we now pass here, though we are seldom a day unemployed. The perturbed state of the Turkish empire, between this place and Vienna, detains us. I wish I had gone with my brother to Marseilles. One day we hear that the road is open, the next, that the

couriers have been stripped and robbed by the rebel Pachas. Turkey is at its last gasp, and waits only for some potent state to put an end to its insignificance. Long after the invasion of Egypt by the French, the Kislar Agha, or chief of the black eunuchs, was the only one who had courage enough to make known the event to the Grand Signor; upon which the Sultan's mother accosted him in this gracious manner; 'You black devil! if ever you interrupt my son's peace, by ill news, I'll have you instantly strangled!'

"We go from Vienna to Paris, and have already written to Otter to join us. Perhaps you will make one of the party; it would be pleasant for the tesserarchy to return together, as they sallied forth. Our Gallic effusions would flow less embarrassed by Anglicisms, than when we opened the campaign in the Bury coach; and I, who landed upon the Continent on stilts, may walk the Palais Royal on the tip-toe of ease and curiosity.

"Mr. Streatton has not succeeded in his mission to Egypt. It ended by a complete misunderstanding among the Beys, Turks, and English. It is said here, by those who pretend to be in the secret, that all this was premeditated on our side, and that the civil war has been, and will be, fomented, to afford us a pretext for holding the country. If so, the Russians will soon give the Grand Signor a visit of

protection and plunder. Britannia plucks the white hairs, and Scythia the black, and the poor old dotard is left bald between them.

"Can any thing be more astonishing than the history of this war? Posterity will scarcely believe what they read. Would you not have sent any man to Bedlam a few years ago, who should have ventured to predict, that the last battle, and the most sanguinary, of this long contest, would be fought on a desert in Africa; or that England could have made such a monstrous exertion of her strength, as to send armies from the mother country, and from India, to meet in Egypt against the French?

"Large flakes of snow are now falling, and the houses of this city are covered with snow. You see how much deceived a man may be who estimates climates by latitude. At the Dardanelles I might at this day gather anemones, and enjoy the warm beams of the sun. Naples, in the same latitude, is now in summer heat. The extraordinary vicissitudes of climate here result from its situation at the mouth of the Bosphorus, which I can only compare to being placed in a passage with all its doors open, or at the nose of a pair of forge bellows. East or west winds are here never mentioned; they are not known. It is always *tramontana*, or *vento de fore*, a name they give the south wind. If you could look out of my window, you might fancy yourself at Petersburg. And this, too, in the middle of March, when even in

Finland some appearance of spring is seen. We have regularly estimated the thermometer from the day we left you, and can present you with many curious observations on the temperature of elevated regions, estimated on the summits of Gargarus, Parnassus, Helicon, Mount Hymettus, &c., and of the degrees of heat at the base and summits of the Pyramids, at the same hour. Cripps claims the chief merit of punctuality and accuracy in this respect. I began this letter on the 16th; I end it on the 18th, exactly at mid-day, and therefore will add, that the thermometer of Celsius is at this moment 3 degrees above 0, the freezing point, which equals 37 degrees of Fahrenheit. Perhaps before night a variation will take place of 10 degrees of heat, and to-morrow we may be all sitting with the windows open; which is enough to kill a horse, if he be of English breed, and accustomed to beef and beer. Those who diet, evade more easily the disastrous consequences of a check to perspiration. The Turk has his head wrapped in a thousand folds, and lives upon pure element and rice. All weather is alike to him. Direct your next to Vienna, 'aux soins de Messrs. Fries and Co.' Adieu! We are informed the treaty goes on at Amiens; all is kept secret here respecting the peace.

"You strongly recommended a visit to Athens; we anticipated your good wishes, and were there before we received them. Our journey from thence,

by land, was full of information, until we entered Thrace, and then the plains of Royston would have been more interesting, because more fertile, nearer home, and free from banditti. The boasted vale of Tempe, is a defile; it is something like Matlock, but wilder; more savage than Salvator Rosa, and with nothing of Claude. I cannot tell why the ancients made such a fuss about it; perhaps because half of them never saw it, and took its character from hearsay; the other half, like mankind every where, stupidly admiring what is said to be admirable. It is like a crack in a great wall, at the bottom of which is a river, sometimes inundated, sometimes dry. The passage narrow, the sides craggy, bare, lofty, and perpendicular. Its whole length not above a mile.

"I am sorry to find you confess your breach of duty, in not having written a book. But you have been engaged in the press, because I heard at the palace that you had published a new edition of your Population; and moreover, I was there assured, so long ago as last year, that you had written a work on the Scarcity of Corn. How does this accord with your declaration? Perhaps it is a pamphlet, and therefore, strictly speaking, not 'a book.'

"March 25.—I have opened my letter again to add, that yesterday I made an acquisition of Greek manuscripts that will surprise you, and which you

must include in the first article of my list. They consist of no less than fifteen volumes, and are as follows:—1. Commentaries, by St. Chrysostom. 2. Lives of the Saints. 3. Life of St. Joasaf. 4. Different Copies of the Gospels. 5. Acts of the Apostles and Epistles. 6. Ancient Homilies, &c. They are all on vellum, and the character is very ancient. I have also a printed copy of Homer, as it was first imitated from the manuscript, but know not the date.

"The news of the road to Vienna gets worse and worse. Lord Elgin's courier has been murdered by the Turks. I know not which way we shall go; perhaps by sea to Italy."

To the Rev. William Otter.

"Mount Hœmus, Pass of the Balcan,
April 10th, 1802.

"I am just descended from the tip-top of an Arab stallion, on which I have been riding in grinning agony for eight hours, over the summit of the highest mountain in Thrace, and no great height after all. If I was nearer England I would bring home my horse, which is much more beautiful than any description of Hœmus, notwithstanding the hordes of banditti in its defiles.

"Well! at last we have left Constantinople.

The Sublime Porte, in the sublimity of its policy, sends an ambassador extra, and plenipo, to Paris. Lord Elgin applied to the Reis Effendi, to include us in his suite, as the sons of princes of the Djiours, or Infidels, and we have now been ten days in a continual procession of a hundred horsemen, prancing with lofty plumes on our heads, and superb hussar uniforms, covered with gold lace, to sustain, as directed, the gasconading appellation of Beys-Adeys. The windows of Pera were filled with all the pretty girls to see us pass out to join the embassy, which left the city in great pomp. The whole road was filled with horsemen. The ambassador in a green turban, and embroidered scarlet pelisse, with the richest coverings to his horse. Prince Morosi, a Greek, his secretary, on a managed Arabian, in satin and embroidered robes, his horse adorned with cloth of gold, and stirrups of the same, burnished. Then followed dragomen, bearing in rich port-feuilles the letters of credence, officers of state, and bearers of utensils, bottles of lavation, incense ewers, pipes, and coffee-pots.

Malgré a few square inches of leather which I have lost by all this parade, our journey has been more pleasant than any equestrian jaunt we have yet had in Turkey. The ambassador, a little Turk in a bundle of fur, takes charge of all our necessities. His Tartars prepare us nightly a house for

our repose, and every morning as I make him the Saban Seirola Effendi! he inquires whether the Mussulmans have done their duty. Who could have imagined on seeing this train leave Constantinople, that it was intended to preserve the same external pageantry all through Bulgaria, Wallachia, Transylvania, Hungary, Germany, and France?

"The English Tartar of the mission, with eleven persons, was murdered a few weeks ago in this defile, by the robbers. Their horses returned after three days to the khan whence they started, which gave the first intelligence of their loss. In the party were three merchants, travelling to Constantinople.

"I hope you will receive news of our arrival in Vienna, almost as soon as this letter. We are compelled by the disordered state of the country, notwithstanding our escort, which is to be increased to six hundred men, if the danger becomes more imminent, to make a circuit by Bucharest (and perhaps we may go, first, even to Silistria), Hermanstadt, and through the whole of Hungary. If we can visit the mines, we shall not regret this delay.

"Plants are just beginning to bloom. We collect all we see. The *chasse de medailles* is at an end. Botany will therefore meet with more attention. The only curious antiquity in this coun-

try is the language, which I do not understand. It so much resembles the Malo-Russian, that Antoine converses with the natives.

"I have the happiness to tell you, that the enormous statue of Ceres is on board the Princessa, Captain Lee, bound from Smyrna for England. I dreaded the voyage it made from Athens.

"Now, I must tell you, what surprising success I have had in the *chasse de manuscrits.* You will find in my last letter to Malthus, a catalogue of them; but since I wrote to him, on the very eve of my departure from Constantinople, an acquaintance with a Greek Prince, a man of letters, who became my friend, and was interested in my labours, opened the way to perhaps almost all that remains of Greek literature, in manuscript, in the Turkish empire. Prince Alexander Bano Hantzeri is his name, of the remnant of those noble Greeks left in Constantinople when it was taken by the Turks. He procured for me fifteen volumes of Greek manuscripts; a copy in folio, on vellum, perfect, of the works of Dionysius the Areopagite, who was converted by St. Paul, at Athens; a work on Natural History, never published; the Dialogues of Theodore of Syracuse, Poems; beautiful copies of the Gospels, none of which, in any instance, contain the Apocalypse. He has moreover promised to add fifteen more, and to procure besides, MSS. from Mount Athos, whence I hope

to obtain a copy of Homer, and one of Demosthenes. My beautiful copy of Plato is gone home.

"The little Essay on the Troade goes on, increasing as I advance, though with pigmy strides, something like the pace of our plenipo. He will stop a day at Shumbe, for the *Courban Beiram*, or sacrifice of the lamb; a great ceremony with the Turks.

"Cripps is as happy and as busy as usual, now writing in half a dozen blank books by my side, while we squat together like two tailors, on the earth, chairs being unknown in this country. I hope you will find in him a better scholar, though not a better man, than when you left him. He is become a good mineralogist, and practically, a good botanist; has acquired an extensive knowledge of nations, and will certainly never regret either the time, or the expense, he employed in his travels.

CHAP. VII.

Vienna—Paris—His return to England—Residence at Cambridge—Bust of Ceres—Tomb of Alexander—His marriage—Lectures in Mineralogy—Made Professor of Mineralogy.

THE tour, which had already continued three years, was now drawing to a close. On arriving in Germany, Mr. Clarke considered himself on beaten ground, and excepting a long letter from Hungary to his biographer unfortunately lost, containing an account of the Hungarian and Transylvanian mines, the latter of which they visited in company with the archdukes Antoine and Renier, nothing beyond a few short notices of his intended route homewards was afterward received by his friends. From these, however, it appears, that he arrived at Vienna the latter end of May, when he received the mournful intelligence of his mother's death, the grief for which kept him almost secluded in that capital for several weeks. During the latter part of his stay, however, he attended the Lectures of the Abbé Gall, on Phrenology, with which he was at the time greatly captivated, and visited all the most celebrated institutions and collections of the city, under the guidance of

his friend, Mr. Hammer, the distinguished oriental scholar already mentioned, whom he had met at Cairo; by whose assistance he was also enabled to make some considerable additions to his minerals and manuscripts. From Vienna he set out for Paris in the beginning of July, and in consequence of a previous arrangement, which the short peace of Amiens afforded an opportunity of carrying into effect, the author of this Memoir left England about the same time to meet him. By the mistake of a banker at Paris, the proposed meeting was prevented until the beginning of September; and when at last it did take place, the appearance of Mr. Clarke was calculated to detract greatly from the pleasure which his friend had anticipated. His health was evidently broken by the fatigue and sickness he had encountered in his journey, and his spirits were at times exceedingly depressed by the loss of his mother. It seemed, for the moment, that every tie which bound him to his native land was weak in comparison of that which had just been broken; and his heart, instead of dilating as it was wont to do, at the prospect of the British shore after a long absence, shrunk fearfully within him at the thought of revisiting a country where he had no longer a home to receive him, nor a mother to welcome him. Of his singular affection for his mother no one who has read his letters will need to be reminded; but it is an act

of justice on the part of one who knew her well to state, that her excellent and amiable qualities amply merited all the kindness and attention with which it was repaid. It was not natural, however, that this state of depression, either mental or corporeal, should continue long. The comparative ease, and regular living which he enjoyed at Paris, soon restored him in a great measure to his former health and appearance, while the number and variety of interesting objects at that time assembled at Paris, with the delight of meeting again some of his early friends, and the society of the most eminent literary men of that capital, soon dispersed the gloom which hung upon his mind. Amongst the latter were the Abbé Haüy, Mr. Faujat de St. Fond, Lecturers in the Jardin des Plantes, General le Grange, General Andreossi, and several other members of the Institute, to whom he had been known in Egypt. With all of these, the quickness of his understanding and manners, and the eagerness of his philosophical inquiries, heightened exceedingly the interest in his character, which the report of his travels had begun. They formed occasionally part of an agreeable and instructive society, English and French, which met at supper almost every night at his hotel; and as some of them were men of eminence under the consulate, and cordially disposed to use their influence in his behalf, many

private collections in Paris, as well as other objects of great interest, not usually shewn to strangers, were open both to himself and his friends. By the Abbé Haüy in particular, to whom he attached himself as a pupil and a friend, he was treated in return with a degree of confidence and kindness, which was not less instructive than it was gratifying to him. Besides the advantages he derived from the public Lectures of this Professor, in the Botanic Garden, which he regularly attended, he was indebted to him for much private information upon the theory of crystals, a difficult and interesting branch of mineralogy, which owed much of its development to the Abbé, and with which Mr. Clarke then for the first time became acquainted. Nor did this friendship, or the benefits Mr. Clarke derived from it, end here. It was supported by frequent communications till the Abbé's death, as well as by many reciprocal attentions to each other's friends—and the readiness of the Abbé to attend to his old pupil's queries after he became professor, was productive of many curious discussions, which are still preserved in a mass of mineralogical papers, collected and arranged by Dr. Clarke himself. Amongst these occupations and pursuits, Mr. Clarke lingered till late in the autumn at Paris; detained there, however, not more by the interest he took in them, than by the indescribable dread of returning to

England, which again revived as the time approached; at last, however, in the beginning of October, the party set out for England together, and Mr. Clarke having restored his fellow-traveller (Mr. Cripps) into the hands of his friends, in Sussex, who received him as one risen from the dead; and having made a painful pilgrimage to his mother's house, at Uckfield, where not a trace of his family remained (for his sister was married and settled in another county), prepared to take up his residence at Cambridge before the division of the term.

Thus ended a journey, which, whether we consider the extent and variety of the countries traversed, with their singular political relations and situations at the time, the treasures of every kind that were collected, or the celebrity acquired, may perhaps be deemed as remarkable as any which modern times, pregnant as they have been with instances of this kind of merit, can boast. It is to his own elaborate work, indeed, for which the results of his maturer labours were naturally reserved, and on which his reputation with posterity must ultimately rest, that the reader ought to be referred for the proofs of this assertion; but as this is not accessible to all, his biographer is unwilling to dismiss so important a period of his life, without calling the attention of the reader to the character of those resources and attainments

which were displayed in it. Of his general qualifications as a traveller, it may be said, that they were at this time of a much higher cast, than when he made his first journey to the continent. Without having abated a single tittle of his unconquerable spirit, he had gained much on the side of judgment and experience; while his later studies, particularly those at Cambridge, had enlarged the sphere of his observation, and added considerably to the strength, as well as to the variety of his remarks. To affirm, indeed, that his knowledge was now at its height, or in any respect comparable to what he afterward attained, would be injurious to his reputation, and unjust to the memory of a life, of which, from this date, every year abounded more and more in labours than that which had preceded it; but, to say the least, it was even then more than sufficient for all the purposes of inquiry and research; and all his other qualities, with the exception of his health, which time would not have improved, were in their full vigour and perfection. Of the buoyancy and elasticity of his mind under difficulties and dangers, of the exertion, industry, and zeal, displayed by him under every circumstance of the journey, it is difficult to speak too highly; and in the sagacity and quickness with which he discovered objects most worthy of attention, even in those departments of literature with which he was less conversant, and the inge-

nuity and perseverance he displayed, for the acquirement of such as could be acquired with honour, he was superior to every traveller of his day. Considering, indeed, how few and scanty were the means placed at his disposal, how little aid he derived from diplomatic influence or authority, or from any public men, or body of men, how frequently he had to struggle, even at the most critical moments of his researches, with fatigue, sickness, and privations, his acquisitions in the various departments of antiquity, art, and science, must be considered as marvellous. He had dispatched to England more than seventy cases of his own before he left Constantinople, while his companion had upwards of eighty, obtained under his advice and influence. In this manner the whole of his liberal income from Mr. Cripps was expended; and, when that failed, that he might not interrupt the career of his acquirements, he sold his Italian collection, to supply fresh resources; prompted, not by a sordid spirit of traffic, as his whole life evinces, but by a genuine love of science, which was his ruling passion, and a patriotic desire of adding to the literary riches of his country. Even in botany, of which he was ignorant as a science, it is surprising how much he did in this journey, towards extending the knowledge and enriching the collections of his countrymen. Besides the plants which he collected in

every country where he trod, amongst which were many new species, he brought to England two entire Herbariums from the two extremities of Europe—one from Lapland, and the other from the Crimea.

That he had faults at this time, that his conclusions were often too sweeping and too hasty, and that his feelings were sometimes suffered to take too free a course, even in matters which were more immediately within the province of reason, it would be equally vain and uncandid to deny. But these faults appear but rarely, while the general accuracy of his remarks is daily confirmed by unquestionable authority—by the reports of travellers who have visited the same countries since, by the numerous extracts from his pages in works of argument as well as taste, by the growing weight, attached to his authority since his death, and finally (if his biographer may be permitted to suggest it) by that more accurate examination of the papers connected with this tour, which his present mournful duty has imposed upon him; amongst which there appear so many full and well-assorted documents, obtained from the most authentic sources; so many references to local authorities, to the habitats of plants, to the situation and distribution of minerals, and to catalogues of books and natural history; as to make it manifest, that whatever may be the value of the

inferences and illustrations, which his own learning and the communnications of his friends have since added to his travels, their chief merit and interest must be traced to the wide scope of his own observations, the extent and industry of his inquiries, and the fidelity with which the results of them were recorded at the time.

The documents which follow, though subsequent in point of time, will serve to throw light upon these observations; the first a kind and playful note to Mr. Cripps, noticing some results of their botanical researches; the second a letter to Mr. H. D. Whittington, containing a set of rules for travellers, evidently founded upon his own practice, and shewing what it was.

To John Marten Cripps, Esq.

Original discoverer of the Convolvulus of Ineada, &c. &c. Gothic Cottage, Wimbledon Common, Surrey.

HARLTON.——

"I have the satisfaction to inform you, that the list of new discovered species found by us in Greece, already amounts, according to Lambert's list, to sixty. As I am referred to in naming them, I have insisted upon tacking your name to one of them, a tall robust shrub; a new species of convol-

vulus. This I have inserted in my travels under the name of *Convolvulus Cripsii.* Lambert had already given mine to a little veronica not bigger than your thumb—*Veronica Clarkiana.* I wrote to say, they should be engraved together in the same plate, for they grow together in Turkey. He objects to this, as the veronica, he says, will look like a speck, beneath the broad foliage of the tall *convolvulus.* I have, however, sent to say, this is my wish, that it may be an emblem of the journey undertaken under your auspices, and that I may be seen to blossom beneath your sheltering branches. You must have a drawing made by Sowerby, and coloured, of the CONVOLVULUS CRIPSII, for your drawing-room, and put the little veronica into a tooth-pick case."

To H. D. Whittington, Esq.

CHRISTMAS-DAY.

"When I recollect that about this time you were to be at Petersburg, I regret that I have delayed writing so long; but I had no letters to offer you for Russia, as you must be well convinced; nor shall I trouble you with a visit from the police, by adding my name to this; so you must guess who I am, for I am aware (as of a certainty) that this letter will be read by the virtuous

agents of the Russian government, before you will be permitted to see a line of it.

"Things remain as you left them; now and then a gownsman is smuggled into the other world and his death attributed to any other cause than to the fever. Two men of Magdalen College have deceased, and the physicians swear they died of the *aurora borealis*. Fiott, after his long travels, has been here, and gave me a most interesting account of his route. He actually entered the tombs of the Macedonian kings at Edessa, now called Vodina, near Thessalonica; make these sepulchres, therefore, a main point, for Fiott wrote no account of them. Be pleased also to remember that you are never to conceive that you have added enough to your journal; never at liberty to go to sleep, because you are fatigued, until you have filled up all the blanks in it; never to go to the bottom of a mountain without also visiting its top; never to omit visiting mines where there are any; never to listen to stories of banditti; nor in any instance to be frightened by bugbears. Remember the arragonite of the grotto of Antiparos, in stalactites, radiated from their centres; also the famous bas-relief which is in the castle of Cos, facing the sea, and of course the manuscripts of Patmos. Do not load yourself with brass medals, but get all the fine silver and gold medals that come in your way, at the rate of the value of double

their weight. Live, as much as you can, after the manner of the people of the country where you happen to be. Endeavour to get specimens of the famous tree-pink (Dianthus Arboreus) from Scyros, and send some of the seed of it to me as fresh as it can be conveyed: if kept until you return, the seed will not grow. Turn all marbles which you find lying flat on the soil. Visit all the goldsmiths or silversmiths. Take a fac-simile of the inscription in Tempe. Ascertain the heights of Parnassus, Hymettus, and the European Olympus. Dig near the temple of Bacchus, at Naxos. Have with you a boat-compass and a telescope, in Greece. Any thing may be done by bribing the local aghas.

"Burckhardt is at Grand Cairo, and Gell at Naples.

"If Guaringhi the artist be yet living in Petersburg, remember me to him; the same also to Bush the gardener, at Tsarsko-Selo.

"All here unite in every good wish and kind remembrance for you, not only of this season, but of all 'times, tides, and ends.' Χαῖρε."

The narrative left Mr. Clarke preparing for his permanent residence in Jesus College, from which there was no longer any thing to divert him: it

was, in fact, his only home; but had this been otherwise, Cambridge would undoubtedly have now been the residence of his choice. With the progress of his travels his ardour for science had increased, and that which was before the prevalent, had now become the habitual principle of his mind. Hence it came to pass, that while the glimpse he had before enjoyed of the literary advantages of an academic life, had remained fresh and vivid in his mind, the little rubs and vexations he had experienced there were forgotten. Besides, he could not but feel that the character in which he was about to appear in the University, was widely different from that which he had sustained before. In every part of England, his reputation as a traveller had preceded him; but in Cambridge in particular, where his letters had been frequently read and canvassed, and the nature and extent of his enterprises had been better known, the estimate of his talents had risen very considerably, and a favourable reception was secured for him with those persons on whose good opinion he was disposed to place the highest value. Here, therefore, in the latter end of November, 1802, he commenced a residence, which, under various circumstances, was continued almost without interruption for nearly twenty years, till the period of his death: during which long time, his attachment to the place seemed to increase with every year that

passed over him, nor did there exist within its precincts a man more anxious for its welfare and reputation, more attached to its distinguished members individually and collectively, more desirous of encouraging every species of honourable talent, and every branch of useful information, more prodigal of his own exertions, or more disposed to honour those of others.

For some time he took no college office, nor was such an employment essential to, or even compatible with his views, for Mr. Cripps still continued with him as his pupil, and the engagements arising out of his travels, were quite sufficient to occupy all the time he had to spare: amongst these his first care was to collect and examine the various cases and packages which had been awaiting their arrival at the different custom-houses of the country; and considering the remoteness of the places from which they had most of them been dispatched, and the variety of conveyances to which they had been intrusted, it was matter of just congratulation, that so little either of loss or injury had been sustained. One accident indeed had occurred which had nearly been of the most serious importance. The ship Princessa, principally freighted with their most valuable acquisitions from Greece, was cast ashore during their absence, upon the coast of Sussex, near Beachy Head, and not far from the estate of Mr. Cripps,

where his father was then residing. This gentleman having heard of the accident, and knowing that there were several packages on board for his son, hastened immediately to the spot, and by his timely interference and care, secured such articles as had received no injury, and saved from farther damage those which had suffered from the wet. Amongst the former was the celebrated bust of Ceres, and other valuable marbles; amongst the latter, the beautiful manuscript of the Arabian Nights,* which had cost them so much time and

* It is a curious fact, that Mr. Hammer, who was commissioned by the Austrian government to purchase antiquities in Egypt, and who was Dr. Clarke's competitor for this manuscript, at Cairo, and afterward for the fragment of a statue amongst the ruins of Sais, in which he conceived himself to have been outmanœuvred by Dr. Clarke, says in a letter to him afterward, of the manuscript, without knowing its fate—"I told you I ought to have had it, and it will never favour with you;" meaning, that it would never prosper with him. This gentleman, a linguist of the highest merit, was recommended by Dr. Clarke to the author of this Memoir, at Cambridge, in Dec. 1800, during his own absence. Of the Saitic statue (now in the Public Library) he then said nothing, though he afterward complained in the Vienna Gazette, of Dr. Clarke's mode of acquiring it; but much amusement was afforded by his account of the keenness and adroitness of our traveller in pursuit of the MS. Arabian Nights, at Cairo. It happened that Mr. Pitt was at this time upon a sort of canvassing visit in the University, and saw Mr. Hammer; he heard of him first at a supper at Jesus Lodge, where in the company

pains to obtain at Cairo, and which, though sent back to Constantinople for the purpose of being restored, was never afterward of any value. Besides this, several cases of drawings and plants, were broken up in the confusion, and their contents dispersed; and though Mr. Cripps continued to receive information respecting some of the articles at Newhaven, for several years, he never could trace them to their possessors.

Of all these treasures, the first place in Dr. Clarke's mind was given to the Ceres; and this, not only on account of the high distinction to which the statue was destined in the University, but for the rank he assigned to it, amongst the monuments of the purest age of Grecian sculpture, and the many classical associations connected with its history. By the liberality of the government it was allowed to be taken out of the custom-house, duty free; and when at last a place had been assigned to it, by the University autho-

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of some young travellers, particularly Mr. Malthus, &c. he was induced to unbend in a very easy conversation respecting Sir Sidney Smith, the massacre at Jaffa, the Pacha of Acre, Clarke, Carlisle, &c. The next day, he desired to be introduced to Mr. Hammer at the commemmoration dinner at Trinity, and continued with him his inquiries about Sir Sidney Smith; Mr. Pitt spoke highly at the supper of Carlisle's translations from the Arabic, the poetry of which he thought beautiful, and some of them he seemed to know by heart.

rities in conjunction with the donors, and the proper preparations had been made for its reception, it was securely placed upon its pedestal, with all due form and honours, in the most conspicuous part of the vestibule of the Public Library, on the 1st of July, 1803; and the names of Dr. Clarke and Mr. Cripps were, by the desire of the University, inscribed upon the base. This event was a source of great gratification to Mr. Clarke—it was the triumph of an honourable wish, which having been conceived at the moment of its successful departure from Eleusis, had been fondly cherished by him ever since, and was now accomplished in a manner the most agreeable to him. Indeed it was a subject of fair congratulation, both to himself and Mr. Cripps, that this celebrated monument, whose removal had been attempted in vain by one of the most powerful ambassadors at Constantinople, and which was guarded no less by the superstition of the neighbouring inhabitants, than by the natural obstacles of its own weight and magnitude, should have been transported in safety to the University by the exertions and address of two of its private members. The public appearance of the statue was quickly followed by a tract from his pen, which naturally grew out of the transaction, and was indeed important to the illustration of it. In this little work, which is entitled, 'Testimonies of different Authors, respecting

the Colossal Statue of Ceres,' the monument in question is clearly proved to be the very individual bust, described as lying at Eleusis, by Wheler and Spon, Pococke, Chandler, &c. and considered generally as the representation of the goddess. A learned distinction is also drawn between the ornaments and costume of the Canephoræ and Cistophori, and those of the Eleusinian goddess, with which they had been confounded; and a short account is added, of the manner in which the property of the travellers in the statue had been acquired, and the means by which its removal to a vessel in the Piræus had been effected. The pamphlet was published in the summer of 1803, and is thus noticed in a letter to his biographer, the closing lines of which cannot fail of raising many pleasing recollections in the minds of those who were acquainted with Dr. Clarke's College rooms and their ornaments.

To the Rev. William Otter.

"Jesus College, July 10th, 1803.

"The Ceres is more and more admired; as for our master, he pulls off his gown and dances round it. The vice-chancellor sent for me, and communicated the thanks of the University, and desired them to be sent in due form to Cripps, and added,

that the University insisted on our names being cut on the pedestal. My little pamphlet is not to be distributed gratis: the good Tyrwhit hit upon a plan, of which I envy him the proposal. The price is to be low, but the amount of it is to go to the poor man who fell from the scaffold and broke his ribs. This will bring twenty-five pounds to a day labourer, at one lump, and as the pamphlet will always sell, as long as lions prowl about the statue, it will be a little fund for his family.

"I fear I shall never have courage to quit the quiet of this place for Brighton. We have such serene evenings, and green walks, even Tyrwhit is now seen, basking on our grass plot, and ——— keeps the Gyps in fine order. We are only three in the whole college. It is like a sweet calm, in a good port, after a storm, and my days fly like gentle breezes, swift, but silent; whispering as they pass, repose and peace!

"We dine at four, and still have time for a walk afterward. I cannot afford such a lounge in the morning, but read and scribble till I get fined for being too late in hall. At breakfast I should sigh, if I were not in my fourth decade, old and callous; when the thought comes across me that Otter will not call. I have nobody to shew my nonsense to now; and, what is worse, I have not had a single letter. Pshaw! this last sentence smells of the sizing bill, which is now lying before me; potatoes,

beef, and broth! I should not have written it before they closed the shutters, and bolted out the breezes. May God bless thee! Here's your health ———!!

"And oft, as from the mountain's brow you bend,
Where northern moors, in solitude extend:
Where scarce a hut, through all the dreary waste,
Invites brave Blue Beard to his night's repast;
Say, will your thoughts to Rhadegunda roam,
And view the wand'rer in his peaceful home?
While fancy waking, paints the well-known scene,
The walls monastic, and the college green,
The chamber hung with painting's deathless dyes,
Where breathing canvass bids old Shakspeare rise,*
Where Edwin's soul in rapture seems to soar,
The peasants smoking at the cottage door,
The tints which Venice from a Titian drew,
De Heem's warm touch, and Herman's silver hue,
Loda's pale phantom, on the stormy heath,
Thy shipwreck, Vandervelde! and gulf of death;

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* This picture had for a while a singular celebrity. In the term before he made his journey to the North, he found it in a shoemaker's shop, covered with filth, and bought it for a guinea, and in the course of cleaning it he discovered, or fancied he discovered, the features of Shakspeare in the subject, and the initials of Mark Garrard in the corner of the canvass. Under this impression, he got leave to exhibit it in the Public Library, and invited the University and the neighbourhood to examine it as an original portrait of the bard. Nor will those who remember the fact, easily forget the numbers which the exhibition collected.

Or when contrasted, 'midst serener skies,
The gallant vessel, calm at anchor lies ;
Sebastian Bourdon's sweet maternal smile,
Bercham's still flocks, and Steenwycke's hallowed pile !

" Oh, 'tis wonderful what effect a glass of college ale has upon a college muse !"

His return to college after the vacation in this year, was marked by many circumstances calculated to gratify his ambition, and to reward his labours. The statue of Ceres had succeeded not only in exciting a high degree of interest amongst the members of the University, and its casual visitors, but had attracted to Cambridge several men of letters and artists, who came there solely for the purpose of studying it, or of making designs from it. Amongst these may be mentioned particularly Mr. Flaxman, who afterward made a drawing of the complete figure, according to his own conception of it, which was engraved by Tomkins, for a subsequent work. But this was only a prelude to those more honourable and more appropriate marks of approbation which the University had in store for them. In his opening speech to the senate, the vice-chancellor, Dr. Davy, of Caius College, paid a handsome compliment to the merits of the travellers, and dwelt upon the credit which had accrued to

the University from their labours and public spirit; and before the winter had expired, a grace was passed unanimously in the senate, for conferring the degree of LL.D. upon Dr. Clarke, and that of M.A. upon Mr. Cripps; and to mark with more distinction the sense of the University, in conferring these honours, a second grace was subsequently carried, to defray the whole expense of Dr. Clarke's degree from the University chest.

From these academic honours and occupations his attention was for a while diverted to cares less peaceful, though happily of a not less innocuous kind, in which he was also destined to act a conspicuous part. The close of the year 1803 was rendered remarkable by the patriotic spirit displayed by the nation at large, under the threat of a French invasion, and particularly by the eagerness with which men of all ranks and professions, amongst the well-born and the well-educated, hastened to prepare themselves by military exercises, for participating in the defence of the country. In these exercises, however alien from their usual avocations, the two Universities were by no means backward to partake. At Cambridge, four companies were enrolled, including gownsmen of every rank and degree, and almost of every age; and as Mr. Clarke was always foremost in every plan which was calculated to rouse the energies, either mental or physical, of the University, he

was exceedingly useful in the formation of the corps, and was eventually appointed to one of the companies in it.

The spirit displayed upon this occasion is a curious feature in the history of the times, and his own description of the drill, in a letter to Dr. Satterthwaite, will perhaps not be thought uninteresting.

To Dr. Satterthwaite.

"Jesus College, Cambridge,
November, 15, 1803.

"Dear Sat.—I have had so much to say, and so much to thank you for, that I thought it quite necessary to sit down in form and write on a folio. But in this way a letter is postponed from day to day, and never written. So, therefore, take me as I am; just come from practising the light infantry manœuvres, over all the hedges and ditches, towards Madingly; wet, muddy, and oozing at every pore. My brother has been here, and passed some time with me. Malthus left me this morning; but still new lions pour in—*n'importe!* The Bursar talks of building a new Combination Room; and certainly we must have a new table in the hall—we have not room even for the members of the college, and still less for lions, who always occupy considerable space.

"I thank you for the handsome manner in which

you have complied with all my requests respecting the Plumbago Mine; for the case you have sent; and the answers you have given to all my queries. For it was of importance that you should not only go up the level, but absolutely ascend the shaft, however fatiguing it might be; and although my questions might not all appear of importance, I shall convince you when we meet that they were essential.

"At present nothing is talked of in Cambridge, but the drill—who shoulders best; and who trod down Beverley's heels in close marching. Yesterday we had a sort of sham fight, on Parkhurst, and they all allow we do better than the Town Volunteers. Colonel Hare came to see us, and said we were the finest body of men he ever saw; and that he would rather command the University corps, than any regiment in England. Certainly our grenadier company attracts the notice of all the ladies. Among them you will see O—— and C ——, in smart light infantry jackets, with black stocks, looking as fierce as Mars. We paraded through the streets, from Clare Hall to Parkhurst Piece, with a full band of music. The corps is intended as a nursery of corps, to supply the nation with officers and drill serjeants. We are all officers in turn. At present the corps consists of four companies of thirty men in each, commanded by Captain Bircham as

general, and by Thackery, myself, Johnson, and Dr. Sill, with covering serjeants who succeed to our posts, when we fall into the ranks; in the order you see here:

Woodhouse, Covering Serjeant.	First Division, Grenadiers.	Lord Palmerston, Covering Serjeant.	Second Division.	Fiott, Covering Serjeant.	Third Division.	Bishop, Covering Serjeant.	Fourth Division, Grenadiers.
	Thackery.		E.D.Clarke.		Johnson.		Dr. Sill.

Captain Bircham.

"Now you may review us yourself; and imagine we are giving the general salute, with the band playing 'God save the King,' or the 'Cambridge University March.' Don't you remember the Swedish air, 'On lofty Mountains roaming?' You did not like the words should be made a *sing song;* so I have adapted new words more appropriate; and I enclose them as they were sung at the concert here, a few nights ago. I have also enclosed the answer of the heads to the plan I laid before them for drilling the laymen members. You have little conception in your peaceful retreat, what high words, and hot water, has attended the formation of this University corps; nor of the open and insidious attacks it has received from avowed enemies, and pretended, lukewarm friends. They voted us 200*l.* from the University chest lately, towards defraying the expenses of the drill. I could have wished the

corps had thanked them for this handsome offer, and declined accepting it; but there are some among us on whom the expense of arms, accoutrements, and uniform, might fall too heavy. But what will your surprise be, when I tell you, that the first person who put down his name for a musket, under a plea of poverty, was the son of a nobleman! I hope he will not engrave his name on the stock.

"The Combination is now too numerously attended to be comfortable; but the greatest harmony prevails, and we live like one great family. I believe so large a circle with so much unanimity would not be found elsewhere. I have not heard a single expression of ill will, either openly or ambiguously, since we met. We have entirely abolished sizing parties; which you will feel the advantage of in a very high degree. There is a Combination Room every night. If a man has no other engagement, he is sure of finding a comfortable rubber, and a party of friends; and if he does not like cards, there are newspapers and reviews for his amusement. At supper we order what we please; except on a Monday, *the gala night;* as commemorating the old Club—on that night, we have a supper prepared, and all make a point of attending.

"Young Wilkins is returned from Greece, and is going to publish his drawings of 'Ruins in Sicily,'

by way of supplement to 'Stuart's Athens.' Miss Wilkins has just finished a most magnificent drawing, representing the Ceres entirely restored to all her original majesty, as seated in her temple at Eleusis. I intend to engrave it in the next edition of the *Testimonies;* which will appear with the *Testimonies respecting the Tomb of Alexander,* and both form one volume.

"There is nothing I dislike so much as that letters, containing *mere gossip,* should lie about, or become *placards;* therefore, I earnestly beg you will burn this. At the same time, it will be particularly necessary for you to make no other copy of the following poem, than what the tablets of your memory may contain. It is the most beautiful thing I ever heard. I give it you from memory myself. My brother is publishing a new edition of the *Shipwreck,* and he applied to Bowles for a few lines to add to the Life of Falconer. Bowles read his letter as he was lounging on the platform at Portsmouth, looking out to the Isle of Wight; and going to his room, added this exquisite sonnet to his answer :—

ON FALCONER, AUTHOR OF 'THE SHIPWRECK;' LOST AFTERWARD IN THE AURORA.

What pale and bleeding youth,—while the fell blast
Howls o'er the wreck, and fainter sinks the cry
Of struggling wretches, ere o'erwhelmed, they die—
Yet floats upborne upon the driving mast?

Oh, poor Arion! has thy sweetest strain,
That charm'd old ocean's wildest solitude,
At this dread hour, his waves' dark might subdued?
Let Sea Maids thy reclining head sustain;
And wipe the blood and briny drops that soil
Thy locks, and give once more thy wretched shell
To ring with melody! oh, fruitless toil!
Hark! o'er thy head again the tempest swell!
Hark! hark! again the storm's black dæmons yell!
More loud! the bellowing deep reclaims his spoil—
PEACE! and may weeping Sea Maids ring thy knell!"

Having now sufficiently provided for the security and credit of the statues and marbles more immediately under his control, the next object connected with his travels to which he directed the public attention, was the celebrated Sarcophagus, now in the British Museum, captured from the French at Alexandria. It is well known how instrumental Dr. Clarke had been in discovering this noble monument of Egyptian art, when it had been clandestinely embarked for France, on board a hospital ship, in the port of Alexandria, and in rescuing it from the hands of General Menou, and the French Institute, who clung to it with a degree of obstinacy almost incredible: and it was very natural that the interest he had taken in it in Egypt should revive with its arrival in England; especially as the origin of the monument soon became the subject of much speculation and perplexity amongst the learned, and Dr. Clarke con-

ceived himself to be possessed of evidence calculated to throw light upon it. Under this impression, he drew up, in 1805, a Dissertation on the Sarcophagus in the British Museum, brought from Alexandria. It was inscribed to Lord Hutchinson, under whose authority he had acted in Alexandria, and the main object of it was to vindicate the pretensions of the monument to the title of the tomb of Alexander. To this hypothesis he had been first led by the name it bore (the tomb of Iscander) amongst the most ancient race of the neighbouring inhabitants, coupled with the extreme veneration felt for it as such by the Turks and other persons of every description in the city of which this hero was the founder; and having been afterward partially confirmed in his opinion by the reports he found in the works of early travellers, as well as by the conversation of learned men on the continent, and at last more decidedly by an accurate examination of such classical authors as had treated of the subject of Alexander's death and burial, he collected his proofs and arguments in a manuscript, which, after being handed about among his friends, in 1804, was by their advice published in the following year, under the title already mentioned. The work had been placed in the hands of Lord Hutchinson, with a view to its being printed by the Antiquarian Society, but was afterward withdrawn at the suggestion of his

friends, who thought it would appear more expeditiously, as well as advantageously, from the University press, the managers of which undertook to print it.

"It was ornamented with an accurate coloured engraving of the tomb, from a drawing by Alexander, and accompanied with several appendices, in one of which was inserted a learned and ingenious illustration by Dr. Parr, of a Greek inscription found among the ruins of Tithorea by the author; and being the first book in which the name of Edward Clarke had appeared in the title page (all his former publications having been anonymous), it was otherwise got up with great care, and at no inconsiderable cost. But this over-nursing was in one respect injurious to it. The subject, though excellent for a pamphlet, was neither popular nor comprehensive enough for the expensive form in which it was thus obliged to appear (the price was eighteen shillings), and the introduction of such topics as the ruins of Sais and Tithorea, however interesting in themselves, was so far injudicious, that it injured the unity of the piece, and added to the expense without furnishing any ground for the argument: thus, notwithstanding the advantages under which it came out, the Work was by no means lucrative, either to himself or his publisher, Mr. Mawman, in whose hands a large number of copies remained for many years. To the author,

however, it was productive of essential advantage in many ways. By the few who read it, it was, for the most part, well received and highly estimated; amongst whom are mentioned by himself, Porson, Parr, Dr. Zouch, Lord Aberdeen, Dr. Henley (Principal of Hertford College), Dr. Knox (his early tutor), Mr. Tyrwhit, Mr. Matthias, &c.; all of whom gave their countenance and approbation, and some their assistance or advice in the work. It was the means, also, of making him more favourably and more intimately known to other men of learning and genius, whose friendship he never lost. Above all, it gave him confidence in his own powers, and enabled him to stand upon much higher ground, when soon afterward he had to treat with the booksellers for his travels. Nor can it be denied, that his position was maintained with great ingenuity: by many learned persons, the proofs were considered conclusive, as their letters shew; others, more reserved, readily expressed their surprise that such a mass of evidence existed; and all were disposed to allow, that a vague and obscure tradition had been elevated in his hands to the rank of a learned and probable conjecture. Of the congratulatory letters addressed to him upon the occasion of this Work, one only will be given. It is from Dr. Knox, and has been selected not less for the good feeling displayed in it, than because it was particularly gratifying to Dr. Clarke himself.

"Tunbridge, March 28th, 1805.

"Accept my sincere acknowledgments for your valuable present, rendered still more valuable by your kind remembrance of me. It is indeed highly gratifying to me, to see one of my scholars advancing in fame as you do; and not forgetting the guide of his boyish studies. It is one of the sweetest rewards of my laborious profession to see eminent scholars shining in the world, and acknowledging that they owe something of their lustre to him who assisted them in the elements of literature. I congratulate you on your success, and say, 'Macte, puer, sic itur ad astra.'

"I am highly pleased with your very curious book: it displays great ingenuity, and must command the attention and respect of all lovers of classical antiquity. I do admire that ardour of mind which overcomes all obstacles, in pursuit of its favourite and laudable objects; I well remember the symptoms of it when you were at school; it constitutes what I call literary heroism.

"I shall make it my business, when in London, to inspect the Sarcophagus; I shall touch it with a kind of awe; by your assistance, I shall be an elegant spectator of it.

"My family all unite in best respects to you, with dear Sir,

"Your much obliged,
and faithful humble servant,
"V. Knox."

Some objections to the hypothesis had been started in the Monthly Magazine, before the publication of the Work, which were answered by Dr. Henley, in an Appendix to it; and others appeared afterwards in the Literary Journal, to which Dr. Clarke replied himself in a letter to the Trustees of the British Museum. This again gave occasion to several communications with Professor Porson* and Dr. Parr, upon the critical meaning of several Greek words which had been introduced into it; and also with Dr. Henley, upon the sacred writings of the Egyptians, in all of which he took great interest; and it will convey some notion of the extraordinary activity of his mind at this period, to add, that in the very midst of this controversy (Easter, 1805) he composed and sent to press a treatise on Mineralogy, principally intended for students, of which the following notice is given in

* Where the chain of his evidence becomes defective after the destruction of heathen temples and monuments, in consequence of the establishment of Christianity by imperial authority, the Professor's reading furnished him with a seasonable argument; Herodian mentions Soros, and St. Austin tells us, a sarcophagus is what all the Greeks called soros: so Caracalla lays his mantle τη σορω, or upon the sarcophagus. In confirmation of this, is an inscription copied by Dr. Clarke at Alexandria Troas, of the time of Alexander, as Porson judged from the lettering, in which the sarcophagus is called soros:—

"Aurelius Soter constructed this soros (sarcophagus) for himself."

a letter to Dr. Henley:—"I have already sent another work to the press, very different in its nature, which will be mere play to me this Easter vacation. It is 'an easy and simple method of arranging the substances of the mineral kingdom;' by which I hope to make mineralogists, as fast as Bolton makes buttons. The introduction only is addressed to persons rather above the class of students, and is intended to develop the theory of elementary principles, the cause and origin of the fluid matter of heat, the formation of atmosphere, &c. &c. It is a portable volume, small and pleasant for travellers."

The work was never published, and its existence is scarcely known to any of his friends, but one or two copies were found amongst his papers, and a slight view of it is sufficient to shew, that it must have cost him considerable time and labour, at the moment his hands appeared to be full of other things. But this was not all; not many months before, he had been appointed to the office of Senior Tutor of Jesus College, in the room of the author of this Memoir, who had vacated it by marriage, and thus a new class of occupations and engagements was thrown upon his shoulders, of the greater part of which he had no previous knowledge or experience, and of some (business and accounts) a great horror; and when to all this, it is added, that he had taken another pupil in the room of Mr. Cripps, and that his time was liable

to be broken in upon by innumerable strangers of all descriptions, foreigners and natives, who pressed upon him with letters of recommendation, and always went away delighted, it will create no surprise to learn, that the number and variety of his engagements during this year furnished matter of wonder, and sometimes of amusement, to his friends. Notwithstanding all these distractions, by which his time was frittered away, the College, with the assistance of his experienced friend and coadjutor, Mr. Caldwell, went on prosperously in his hands, till he was happily relieved from it by his marriage, in the spring of 1806: upon which occasion, the noblemen and fellow-commoners of the College, presented to him, through the hands of the Marquis of Sligo, a piece of plate, accompanied by a handsome letter, expressing their sense of his kindness and attention in his office, and their regret for his loss.

The lady who was the object of his choice, was Angelica Rush, the fifth daughter of Sir William Rush, of Wimbledon, and the cousin of his pupil, Mr. Rush, of Elsenham. It was, strictly speaking, a match of affection on both sides, and throughout the whole progress of it, was marked with a more than usual portion of those anxieties and fears which are apt to accompany such arrangements, although happily exempt in the sequel from the disappointments and inconveniences

which sometimes follow them. At first, indeed, the connexion was thought very flattering; the lady was beautiful and accomplished, her father a man of large fortune, and Mr. Cripps, Dr. Clarke's pupil, was about to marry the third sister. But when the circumstances and dispositions of the parties had been fairly considered, in relation to each other, the aspect under which it appeared to his friends, was very different. A wide disparity of years (Dr. Clarke's age was double that of the lady), a real difference of habits, a presumed discrepancy of taste, and, worst of all, a very narrow income, were the prominent features of the case, as they presented themselves uniformly to those whom he consulted; and making every fair allowance for the chances of life, and for that powerful stimulus to exertion which the wisdom of Providence has happily annexed to a prolific marriage, it was impossible for them to regard the match, or to represent it to himself in any other light than as a most imprudent one; insomuch that, notwithstanding the powerful influence by which he was impelled (for it was not likely that a passion which is apt to animate even the cold and sluggish, should burn with an ordinary flame in a heart so susceptible as his), there were moments in which he himself was so strongly touched with the thought of involving in unknown difficulties a person to whom he was so much attached, as to

undergo the most painful struggles; during which, many letters tinged with his romantic spirit, and marked with his peculiar mode of expression, but always generous and honourable, were written by him to his biographer.

From the moment, however, that he was convinced of the lady's firmness, he looked no farther back, but giving himself up entirely to the stream of his affection, and relying upon his own exertions in some shape or other, for a better provision, if it should be needed, he pressed on his marriage with all the dispatch imaginable; and as no difficulties were now thrown in the way by her parents, they were married on the 25th of March, 1806. The ceremony was performed in London, by the Bishop of Bath and Wells, and the events which preceded and followed it, amply justified the confidence he had placed in his own good fortune. During the short administration of the Whigs, he had been a candidate for the Professorship of Modern History, in which he did not succeed; but before the day appointed for the marriage arrived, the vicarage of Harlton, belonging to Jesus College, became vacant, and after some weeks of anxiety, during which his seniors were deliberating, the option at last came down to him; and having already determined to enter into holy orders, he was ordained by his old friend, the Bishop of Bath and Wells, in December, 1805,

and immediately instituted to the living. But this was only a part of his good fortune. Not more than three years after his marriage, the rectory of Yeldham, in Essex, in the gift of Sir Wm. Rush, and tenable with Harlton, unexpectedly became vacant, and was presented to him. Thus he became possessed of a considerable income from church preferment, not any part of which he had calculated upon when he determined upon his marriage. "As to the living of Yeldham," he says, "I never knew of its existence until it came. I was like a man gaping in a hailstorm, and 'a pearl of great price' fell into my mouth, to my utter astonishment." In all other respects, the consequences of this union proved directly the reverse of what the calmer heads of his friends had anticipated from it. Before many months had elapsed, it was obvious that the character and disposition of Mrs. Clarke were precisely such as those who loved him best would have chosen for him, and that the habits of life she was forming were in perfect conformity with his own wishes, and suitable to the new fortunes and circumstances in which her marriage had placed her. So far from being desirous of public admiration, she was more attached to domestic privacy than himself; all her employments and all her pleasures were sought for and found at home; nor did she seem to have an expectation, or even a wish of any kind, beyond

the sphere of her husband's fortune, or the circle of his employments, while the taste which was gradually displayed by her, first in the comforts and ornaments of his house, then in the embellishments of his work, and finally through the whole range of his intellectual pleasures, gave a charm to her character in his eyes, which was perpetually varied and renewing, and appeared perhaps more delightful to him, because it was discovered and elicited by himself. Nor did the benignant influence of this union rest here; he was indebted to it for a better frame of mind, and a greater steadiness and consistency in his pursuits. In the whole character of the lady, there was a quietness and repose admirably calculated to soften that turbulence of spirit, which was at once the charm and the danger of his own, and which literary fame often stimulates, but rarely satisfies; while the suggestions of her plain and unaffected sense, openly but seasonably delivered, often called him back to calmer and juster views of things, and made him question the results to which his own sensibility was leading him. On the other hand, in the desire he felt of adding to the comfort and of providing for the necessities of his family, he had a strong and unfailing motive for his literary labours, which now began to wear a new and an additional value in his eyes; and there is the strongest reason to believe, that without this sti-

mulus, his great work, the Travels, the fruit of so much painful labour, would never have been finished, and scarcely perhaps have been begun; not that his literary ardour would have been less, but it would have been more excursive and more ambitious of new paths, and, at all events, more philosophical and experimental. But, after all, the great beauty of the union was, that to the quiet habits of domestic life it induced, so favourable to the reception of Christian truth, and to the formation of Christian virtue, concurrent with the serious nature of the office he had undertaken, he was indebted for a more earnest application of the Scriptures to his own mind than had hitherto been remarked in him. Many proofs of this may be drawn from various parts of his works and life; but the most striking will be found under the pressure of the afflictions which clouded his latter days.

The report of his marriage was hailed by a distinguished classical friend, with the following complimentary verses:

E. D. CLARKE, LL.D.

Daphnidi suo Doctissimo Dilectissimo
Desiderio tam Cari Capitis
Graviter Commota

GRANTA

Lugubrem Hunc Cantum.

Ah fugis? aut nostrum frustra petis advena lucum?
(Six Granta infidum Daphnida fida vocat:)

Quis color hic croceus? nostræ contrarius urbi
Tene adeo spretâ Pallade jactat Hymen?
Nec te noster amor, promissæ aut cura salutis,
Nec confecta gravi vulnere Granta movet?
Non sancta inspirat tales Rhadegunda* furores,
Et monet insolito Gallus † ab ore sono.
Præ veneris campo num Grantæ flumina sordent?
Anne tuo frustra est munere dives ager?
Aspice virgineo demessa ut pollice serta
Luget Eleusinio littore rapta Ceres!
Quin Pellœa suo stupet umbra emota sepulchro:
Fallor, an et nobis altera Thais adest?
Moribus, ingenio, famâ dotabere virgo,
Et novus Angelicâ luce Medorus erit. 1805.

Immediately after this event, he went to reside in Cambridge, where he hired a small house in St. Andrew's Street, and as his living of Harlton was only seven miles from the University, he constantly performed the duties himself.

* Abbatissa Monast. Jes.

† Episcopus Alcock fundator Jes. Coll. Cant.

CHAP. VIII.

His Lectures on Mineralogy—Sale of Manuscripts—Of Medals—Removal to Trumpington—Publication of the first volume of his Travels—Other Engagements—Plan for the farther prosecution of his Travels—Return to residence at Cambridge.

The course of Dr. Clarke's life now turns from this happy union to a department of his labours, which was always uppermost in his own thoughts, and, next to his Travels, obtained for him his highest distinction, as a literary man: viz. his Lectures on Mineralogy. The history of these Lectures belongs properly to this period of his life, for they commenced not long after his marriage, and were, in truth, one of the resources upon which he always seemed to rely, when the difficulties of a family were pressed upon him by his friends; but as they had been a favourite object of his speculations for many years, and were now only accidentally connected with this event, it will be necessary to trace them somewhat nearer to their source. It is well known to all his friends, that whatever temporary interest his works already published had excited in his mind, they were only the result of so much

time and labour reluctantly withdrawn from mineralogy. During the whole course of his journey, this science, and the objects connected with it, obtained every where the greatest share of his attention, and had been cultivated by him with the greatest success; to which several circumstances had contributed. Low at that time, as was this branch of literature in our Universities, it had risen under a variety of encouragement and patronage—the result of policy as well as taste—to a high degree of importance in every public establishment of education on the Continent; and, as Mr. Clarke brought letters of recommendation to the most eminent professors wherever he went (an advantage which his own spirit always contributed to improve), he was in all places cheerfully admitted to a participation of all the local discoveries or improvements, and supplied with specimens of all such minerals as they respectively produced. But this was not all; the course of his travels often led him to remote districts, particularly in the eastern and southern parts of Russia, not accessible to the ordinary mineralogist; and as he spared neither pains nor money in his researches, besides a very ample store of minerals more or less known, he brought to England several rare and valuable specimens, which were for some time almost peculiar to his collection: and it may be affirmed generally, that of all the fruits of his

travels, his acquisitions in this department were infinitely the most precious in his eyes. To bring forward, therefore, this collection before the public eye, and with more advantage than his own limited apartments would permit, to communicate to others the lights which he himself had obtained and to disseminate throughout the University a portion of that flame which burnt within himself, were, from the first, wants infinitely more pressing in his mind, than the hope of reputation or advantage from any other quarter; and as the only obvious means of embracing at once these objects was the delivery of Lectures under the patronage of the University, it was to the attainment of this, that his best efforts, from a very early period after his return, were uniformly directed. But the task was by no means an easy one. The subject was little known, and less studied, and by no means popular in the University; nor was there any room suited to the purpose, but what was either preoccupied or appropiated; and, besides, there was an apprehension of the Lectures interfering with the Woodwardian professorship, at that time occupied by a gentleman for whom Dr. Clarke had justly a very high respect. By degrees, however, all these difficulties gave way. Every facility was afforded by the University to the plan; Dr. Martin, the Botanical Professor, gave up his room in the Botanic Garden, which his age and infirmities

prevented him from using himself; and the Woodwardian Professor, whose proper department was Geology, so far from considering these Lectures as an interference with himself, kindly concurred in every measure which was required for their establishment. In short, as soon as he could enter upon it, Dr. Clarke had the happiness to find, that the field was open to him without either opposition or ill-will, and the fiat of the Vice-chancellor followed almost as a matter of course. Having therefore finished his preparations, which were both expensive and laborious, and which had been suspended during some months previous to his marriage; and having published a new synopsis of the mineral kingdom, and an extensive syllabus, he at last announced a day for the opening of his Lectures, the 17th of March, 1807. What his sensations were at the approach of the moment, which was to be the crisis of his fate, will be best known from the extract of his letters to Mr. Cripps.

"Feb. 12, 1807.

"I send you the Cambridge paper; you will see the two advertisements. On Tuesday, 17th, at a quarter after twelve, imagine me in a grand room, before all the University, tutors and all!—all my minerals around me, and models of crystals."

"Feb. 18, 1807.

"I have only time to say, I never came off with such flying colours in my life. I quitted my papers and spoke extempore. There was not room for them all to sit. Above two hundred persons were in the room. I worked myself into a passion with the subject, and so all my terror vanished. I wish you could have seen the table covered with beautiful models for the Lecture.

"Fancy me in the midst of my pupils, as Haüy used to be, coming from Lectures. I have now my Lecture board covered with names on all sides."

The success which the first Lectures obtained, and the interest which they continued to inspire, are too fresh in the memory of his friends to require any observation or testimony from his biographer: suffice it to say, that in the course of the following year, his reputation as a mineralogist, in the University, was so far established, as to encourage his friends in the hope of obtaining for him the establishment of a new professorship in the University in his name. This measure met at first with some opposition, and having been prematurely pressed, had in the first instance failed; but in the latter end of 1808, the second year of his Lectures, the sense of the University having been previously

tried, a grace to that effect was brought up to the senate by the Proctor, the Rev. G. D'Oyly (now Dr. D'Oyly, Rector of Lambeth, &c.) and carried almost unanimously. Writing to a friend, he says,

"Dec. 1, 1808.

"D'Oyly has proved himself a noble support; you cannot conceive how much interest he takes on my account. He has been all over the University, and he says, they are unanimous to a man, in their desire to see me upheld in this place. Next Thursday week, he goes up with the grace to the senate, to found a professorship in my name. After what happened last time, I will promise nothing; but there is every appearance of the most triumphant and popular success."

"Dec. 15, 1808.

"I have only time to say, it has been carried triumphantly, and I am Professor of Mineralogy.

"When the voting began in the senate, there was not a single negative in the black hood house, and in the white hood house the votes were thirty-eight to seven."

Thus were his most sanguine wishes crowned with success, and thus were his spirit and perseverance rewarded with one of the rarest and

highest honours which the University could bestow. How well he merited the distinction, will appear hereafter.

In this year he preached two sermons, at St. Mary's, with great reputation and success; the first upon the prejudices of the Jews, the second upon the prejudices of the Gentiles, in the reception of the Gospel.

The next important concern in which he engaged, was the disposal of the manuscripts he had collected in his travels. It appears from his letters, that the acquisition of these treasures had always been regarded by him with extraordinary pleasure, although it was difficult to form any probable estimate of their worth before their arrival in England; but having freely submitted them shortly after his return to the inspection of the most eminent scholars connected with the University, he had soon still stronger reason to congratulate himself upon his success. Amongst them the Patmos Plato was soon distinguished by the sagacity of Professor Porson. Others of the manuscripts passed through his hands, and received occasionally the benefit of his remarks, but to this he attached himself in a particular manner, attracted not more by the characters of beauty, clearness, and almost unrivalled antiquity, which constituted its saleable value, than by the ample field afforded by the notes and quotations in the

margin for the exercise of his acuteness in conjectural criticism, in which he was so incomparably eminent. From the moment this treasure was confided to his care, it scarcely ever was suffered to be out of his hands; wherever he went, he carried it about with him, and it remained in his possession till he died. It was also a strong bond of union between Dr. Clarke and himself, and the first occasion of that intimacy, which was afterward continued with so much pleasure to both; and as every thing which relates to this extraordinary man, is interesting, the reader will not be displeased to find here, two letters connected with this subject, though anterior to the present period of the history; the first from Dr. Clarke to the Rev. George Browne, of Trinity College, describing the impressions left upon his mind by his first interview with this great scholar; the second from the Professor himself, containing his earliest report of the manuscript.

"JESUS COLLEGE, Cambridge, Jan. 8, 1802.

"'And truly, as touching Porson, all the accounts I have heard of this wonderful man, for so many years, have not raised my expectations high enough, to see him without astonishment.

Τοῦ καὶ ἀπὸ γλωσσῆς μέλιτος γλυκίων ῥέεν αὐδή.

"So rare is it to find among men, the highest

attainments in ancient literature, joined to a love of the poetry of yesterday, the most refined genius, and almost supernatural intellect. I had seen him at my rooms in the morning, and we bore off together to Trinity, the Plato and Aulus Gellius. In the evening he came, already primed, but did not miss fire. He was great indeed, narrating, reciting; sometimes full of fun and laughing; at others weeping bitterly at the sufferings of friends that flourished near two thousand years ago, but with whom he seemed as well acquainted, and as familiar, as if they had smoked a pipe with him the preceding evening. At about three in the morning, a curtain seemed all at once to fall over his mind—ale, wine, and smoke, had extinguished the intellectual flame, and he remained from that moment until he left me, like the beam of some great building on fire, whose flames the engines have put out, black and reeking.

"Porson is all rapture and joy about the Plato; he says Greek MSS. are old, even down to the year 1400; as the Greek language experienced a revival in latter ages. Latin MSS. have no antiquity after the eighth century. The Plato, said he, may be considered as equivalent to the combined authorities of any two known MSS. It is a monument of literature! There's for you! Townley's Homer he considers as one hundred years later than the Plato. He found the Postcript perfect,

and had no objection to make to the inserted letters. The work '*de Animalium Proprietate,*' is extracted from the works of Ælian and Aristotle."

"Dec. 18, 1802.

"I am much obliged to you for your very important and interesting information, of which I hope to avail myself in a few days. The MSS. must at any rate be extremely curious, and being so old (November A. C. 896) may perhaps be the source from which all our present copies are derived. It is only six years younger than the oldest Greek MS. that Montfaucon had seen, with an express date. (Palæographia, p. 42.) But Dorville (on Chariton, p. 49, 50.) had in his possession a MS. of Euclid, written in the preceding year (Sept. A. C. 889), written by Stephen Clerk (any ancestor of Mr. Clarke's?), and purchased by Arethas of Patræ for four (read fourteen) nummi. In the second line of the specimen you sent me, the reading is Ἀρέθαι διακόνωι πατρεῖ, i.e. the MS. was written by John the calligraph, for the use of the deacon Arethas, a native of Patræ, and cost thirteen Byzantine nummi, about eight guineas of our money; a specimen of the MS. dated A.C. 890, you may see, No. 3, of the plate opposite to p. 270, of the Palæographia. I shall add no more, as you may find Dorville's Chariton and Montfaucon's Palæo-

graphia, both in our and the public libraries. Tell Hole, that I have got the third and fourth volumes of Schweighæuser's Athenæus (Lib. iv—vi. of text, iii. iv. of notes), which I will bring down with me if he wants them. I have, I believe, nothing to add, but that I am with due respects to all friends, dear Sir,

"Your obliged, humble servant,

"Richard Porson."

"No. 5, Essex Court, Temple,
Or rather, No. 15, Charter-House Square."

Others of the MSS. were placed in the hands of Dr. Butler of Shrewsbury, Dr. Maltby, and Dr. C. Burney; and several copies of the Gospels were examined and collated by the Dean of Ely (Dr. Pearce), and Mr. Hollingworth.

In this manner the MSS. were distributed till the autumn of 1807, when Dr. Clarke having become better acquainted with their value, as well from the report of these gentlemen as from his own examination, his next care was to see them placed together in some secure and honourable repository, where they might always be accessible to the learned, and would be estimated as they deserved; and although he was compelled in this arrangement to consider what was due to his family, yet the way in which he set about it, evidently

shewed the liberal and patriotic views always prevalent in his mind. His first wish naturally rested upon his own University; but he had been early taught to believe that the public authorities there had no fund applicable to such a purpose. He next turned his thoughts to the British Museum, and, as it is said, was actually upon the steps of that building with the view of proposing his collection to one of the Curators, when he was accidentally accosted by a Professor of the sister University, who suggested to him the idea, which he readily seized, of offering it to the Bodleian Library. However this may be, certain it is, that the proposal was made in form to the Bodleian by Dr. Kett in the spring of 1808; and the Curators having immediately expressed their readiness to treat, a correspondence, which yet remains, commenced between Dr. Parsons of Baliol, then vice-chancellor, and Dr. Clarke himself; which notwithstanding some trifling delays, chiefly caused by the want of knowledge of business on the part of the latter, was happily brought to a conclusion in November of the same year, to the satisfaction of all the parties. The first offer included his early editions of printed books, which were afterward at the request of the Curators withdrawn. The price was 1000*l*. Dr. Clarke seems to have signified a wish in the first instance, that the Curators should themselves put a value upon the MSS.

after having received a catalogue and inspected them, but this they naturally declined, and proposed a reference to Mr. Porson, which was probably prevented by the Professor's state of health, for he died in September of this year: and in the end Dr. Clarke undertook the task himself. The particulars of his valuation are amongst his papers, and the first articles shall be extracted to shew the fair, moderate, and unaffected manner in which he conducted it.

"Dr. Clarke, by and with the advice of friends, does most respectfully submit the following answer to the Curators of the Bodleian Library.

"1. That the value of the Patmos Plato, may easily be estimated, from the price set upon it by Mr. Paine, bookseller, of London, from the recent sale of Mr. Cripps's copy of the Orators, which, although without date, and evidently not older than the thirteenth century, sold for three hundred and fifty-five guineas, and also from the expense and difficulty of acquiring it; and that its value be fixed at four hundred and fifty pounds. Vell. folio.

"2. The small volume from Patmos, of the works of Gregory Nazianzenus, being, according to Professor Porson, in a character almost as old as the Plato, and moreover, containing marginal notes of importance, is, notwithstanding, without

date. It is difficult therefore to fix any adequate price upon it. If, therefore, forty pounds should be deemed by the Curators of the Bodleian a sum much below its real worth, Dr. Clarke and his friends, as in all other instances, have the utmost reliance upon the future consideration of that respectable body. This manuscript is also upon vellum.

"3. In a case of red morocco, now sent to Oxford, the Curators of the Bodleian will find a most exquisite copy of the Gospel, written on vellum. It belonged originally to Prince Alexander Bano Handjerlï, of Constantinople. Some entire pages are written in gold. The manuscript is moreover perfect. It is bound in wood, covered with brown leather. The following observations were drawn up concerning it, by the Rev. Dr. Pearce, Dean of Ely. 'As it has not the note of interrogation (;) it was written before the ninth century, when that note was first introduced. It is not prior to the seventh century, as it has accents. It has the Iota postscriptum and not subscriptum. The comma, characteristic of the eighth century, very seldom occurs.' This manuscript, from its excessive beauty and antiquity, as well as from the price paid for it, is valued at sixty pounds."

The number of articles was thirty-two; one or two of lesser value were missing when the

collection arrived at Oxford, but Dr. Clarke voluntarily added several others not included in the catalogue, and also some scarce printed books, which was handsomely acknowledged by Dr. Parsons. Amongst them may be mentioned, the first edition of the Poems of Chartier, and a MS. of the Code of the Calmuc Laws. A learned catalogue of all the manuscripts purchased of Dr. Clarke was soon afterward drawn up by Professor Gaisford, and printed at the University press.

His Greek coins, the fruits of the same travels, he disposed of in the course of the next year, 1810; on which occasion the same liberality was displayed by him in his treaty for them, and the same anxiety for their ulterior use and destination. "I feel the necessity," he says, in one of his letters, "of parting with my medals, but I shall be satisfied to get 100*l.* for them, if I can place them in the hands of Lord Aberdeen, or Mr. Payne Knight." Whether they were previously offered to Lord Aberdeen, is not known to the author of this Memoir, but the proposal was promptly and gladly accepted by Mr. Knight; and a hundred guineas was immediately dispatched by him to Dr. Clarke, instead of the hundred pounds which was asked; nor should it be forgotten, that after they had been carefully removed, a task which Mr. Knight performed in person, and had been examined more at leisure, he requested Dr. Clarke's acceptance of a

piece of plate. This was a handsome cream-jug, exactly fashioned after the model of an antique vase in Mr. Knight's possession, with a classical inscription by himself; and for the sake of Dr. Clarke's memory, he will, it is hoped, pardon the following extracts from his letters upon this subject, as testifying from so competent a witness, not less to the taste and industry displayed in the collecting, than to the liberality shewn in the disposing, of these coins.

"I really feel stubborn scruples of conscience at having accepted your coins at a price, which I find upon mature examination to be below their real value, and though I know your liberality will not hear of any farther pecuniary consideration (nothing could be more certain), perhaps you will do me the favour to accept of some trifling article of plate, as a mark of my esteem and gratitu de. In a subsequent letter: "Allow me again to thank you for the very valuable addition made to my collection, and for the liberal and handsome manner in which it has been done: the more I examine the more I am satisfied and delighted, and more sensible of the extent of the obligation you have laid me under."

It is fair to add from the same source, that whatever light the bronzes or coins in Mr. Knight's

collection, or his own extensive and accurate knowledge, could throw upon the subjects of Dr. Clarke's inquiries, was always most readily supplied, with a handsome acknowledgment, of the obligation by which all the friends of arts and letters were bound to furnish him with every information in their power, for the sake of the use he made of it.

Before this last transaction was completed, a change had taken place in his residence. It will be remembered, that the first place in which he settled was a small house in St. Andrew's Street; but in 1809, when his family had begun to increase, and his prospects in life to expand, he removed to a family house belonging to the Ansties at Trumpington, a pleasant village about two miles from Cambridge; where the author of this Memoir, who had been his neighbour in the town, had been residing some months before. It was a dry, airy, and capacious mansion, in good repair; admirably calculated for a rising family, and not less favourable to the health of Dr. Clarke, than it was agreeable to his taste; inducing by its walks and grounds much voluntary exercise, which was what he required, and administering largely to the pleasure he took in rural occupations and amusements, of which no one had a keener relish than himself. "If you could see this place now," he says in a letter to Mr. Cripps, "it is a perfect paradise; the

air is perfumed by innumerable flowers, the groves full of thrushes and nightingales, the trees literally crowded with fruit; we began to cut the hay this morning, and Angelica with Edward are already in the field, tumbling in the midst of it. The eternal sunshine of Cambridgeshire is, in my opinion, a peculiar characteristic of this part of England." There was only one evil attending this residence, and that was, the expense; for though Dr. Clarke had calculated upon a considerable saving from the diminution of his company at such a distance, his own liberal hospitality, with the pleasure his friends derived from his society, and the attractions of the place, precluded the possibility of such a result.

We now approach the period of the publication of his Travels. So early as the year 1805, and shortly after the appearance of the tomb of Alexander, an agreement had been concluded and signed, through the intervention of Dr. Henley (Principal of Hertford College), in virtue of which he assigned to Messrs. Cadell and Davies of the Strand, the copyright of his Travels, upon the liberal condition of receiving ten guineas a sheet, free of all deductions, to whatever extent the work might be carried; to which was to be added a large number (25) of presentation copies gratis. In consequence of this arrangement, the drawings for the first volume were immediately placed in the hands of

the engravers; and every other preparation was made by the Booksellers for the speedy publication of the Work. At first, however, the progress of it was very slow; other matters of more immediate and more pressing interest, particularly his marriage, and the preparation for his Lectures, occupied almost exclusively his time; nor was it till a considerable period after his marriage, early in 1808, that he found leisure to apply himself seriously and earnestly to the task; from this time, however, the Work made a rapid progress, and at last, at the commencement of the year 1810, the first volume appeared in 4to., and the rest followed at nearly equal intervals of two years.

It is beside the purpose of this Narrative, to enter into the merits of a Work which has already been so much canvassed by critics of every description; suffice it to say, that notwithstanding the lofty nature of the expectations formed of it, its success, particularly at the outset, far exceeded every thing which had been predicted of it; that the early volumes in particular went through several editions in this country, and were translated into some modern languages; and that if the sale of the latter has not been quite so extensive as that of the former, it must be attributed not to any difference in the execution of the Work, but to the greater or less degree of interest which the different countries described, with their different

productions and relations, were calculated severally to inspire. Of the truth of this observation when applied to the first volume, relating to Russia, it is impossible to entertain a doubt; from the singular situation of that country, in the latter years of the Emperor Paul, with regard both to her internal and external policy, and the general exclusion of strangers from his dominions, every authentic account of that period was likely to be received with avidity, while on the other hand the probable influence of her power and counsels upon the fate of Europe, at the time of the publication, rendered the character of her institutions and people, objects of the most lively and general interest. Thus was the public mind prepared for the Work, and thus did the strong tone of feeling under which Dr. Clarke wrote, accord with the general excitement under which it was read; and when we consider farther, how strongly political prejudice is apt to warp the judgment of mankind, the same facts which will account for the rapid sale of the volume, will also explain the reason of the extravagant praise or blame which has attached to it. Looking back now with an impartial eye upon the Work, and the nation it describes; considering the extraordinary susceptibility of the Author's mind, and the expression he lets fall in one of his letters, that he should be glad to like the Russian people if the government would let

him, we may admit it to be probable, without impeaching the veracity of a single statement, that the vexations he underwent, induced him unawares to linger more on the dark side of the picture than upon the bright one, and that he might possibly have sat down to the composition of his Work, under much of the same kind of feeling with which many others sat down to the reading of it. It should be remembered too, for the sake of all parties, that Dr. Clarke saw the Russian people at a moment when their natural good temper and vivacity were soured by the disgraceful situation of their country.

The first volume appeared early in 1810, the second in 1812, the third in 1814, the fourth in 1816, the fifth in 1819; of the sixth only twelve chapters were finished at his death, the rest were added by his friend the Rev. Robert Walpole, to whom the public is indebted for many interesting and valuable notes in his former volumes. Of the first, three quarto editions were published, of the latter volume only two; but it appears from his letters, that 1500 copies were printed of the first edition of the 2d volume, and 1600 of that of the 3d, and, in both cases, sold off in a short period. There has also been an octavo edition of the first four volumes. Thus it appears, that this great Work occupied a period of nearly twelve years, and the delay has sometimes been imputed to him

as a fault; but the accusation is most unreasonable: in the execution of such a task nothing could have been less becoming towards the public, or more revolting to himself than haste; and yet do all he could he was not always able to avoid it. Such was the demand upon his time, from his imperative professional engagements, which sometimes engrossed him altogether for a considerable period, that he was rarely advanced above a few sheets beyond the Printer; and at times, nothing less than long days and nights of labour, as injurious to his health as they were oppressive to his spirits, enabled him to fulfil the expectations of his Publisher; nor must it be imagined that he wrote for this work with the same ease and rapidity with which he proceeded in other things; the wide scope and learned character of his subjects, demanded constant and laborious research, and the modelling of his sentences, frequently cost him considerable pains. "If I had not been blessed," he says, in one of his letters, "with double the share of spirits, which commonly belongs to sedentary men, I should certainly sink under the task, but I wish you who may survive me, to tell my little Edward and Paget hereafter, when they hear people say *I wrote with ease,* how much they were mistaken."

Add to this, that he was nice, not to say supercilious, in the revision of the engravings and other

embellishments of the Work, all of which by a special article of the contract passed through his hands, and were submitted to his approval; and it is difficult to conjecture how much time and trouble were expended in alterations of this kind, which originated in himself. Under these circumstances, instead of being surprised that a work consisting of six quarto volumes, and containing nearly 5000 pages of letter-press, should have occupied so long a period, we can only wonder that he was able to do so much within the time; especially as it may be affirmed with truth, that he left more memorials of his labours during the period of this publication, in each of several other departments of learning, than almost any other person whose attention had been confined to one of them. This is a sweeping observation, but it is not made unadvisedly. In Mineralogy, in Chemistry, and the Fine Arts, &c. his productions are well known; but it is not known, although infinitely more creditable, that in the course of fifteen years, he composed a great number of Sermons, now extant; of which, at least ten were preached on public occasions, or in St. Mary's.

It has been stated, that ten guineas a sheet were to be paid for the Work, but after the second volume, a slight alteration in Dr. Clarke's favour was made, in consideration of his resigning his claim to the greater part of the presentation co-

pies; in consequence of which, the sum of 1200*l.* was paid for each of the three succeeding volumes.* One hundred pounds was also allowed to him for the additions to the 2d edition of the second volume; and upon the whole it appears that 5845*l.*

* It is curious to contrast, at this distance of time, the manner in which this work was actually composed, with the course recommended to the author, in the following extract of a letter, from one of the most intelligent of his correspondents:—

"Will you now permit me, as a friend, to hazard a hint to you for your future work. Let your various journeys be your own sole observations—what you saw—what you heard—what you marked down on the spot. Let there not be the least appearance of compilation, and no reference at all to any preceding writer or traveller, except from a necessity which cannot be avoided, and that, I think, will seldom occur. There should be what Sir Wm. Temple calls 'a raciness' in your travels. They must be what wine should be—they should taste of the native flavour of the soil. They must not be filled or contaminated with extracts or opinions of others; if you do, the whole will be vapid. You may now avoid this, and so may write them in the epistolary, or any other form. What you publish must be exclusively your own, or it is nothing. You must not be like——"

Considering the character and talents of Dr. Clarke, there are few I think of his friends who would not have concurred at that time in the propriety and good sense of this advice, and yet one cannot now be sorry that he did not accept it; for though his letters from abroad are a sufficient evidence that a work constructed by him upon such a plan, would have been much more lively and interesting to ourselves, all would have been disposed to lament that the great monument of his learned industry which his travels have supplied, should have been wanting to posterity.

were received by him for the first five volumes; the last was paid for at the original rate, and amounted to 750*l*. The speculation must have been exceedingly lucrative to the Booksellers, but in the first instance the risk was also considerable, and it is only an act of justice to the late firm of Cadell and Davies to say, that their conduct throughout was both liberal and conciliatory to Dr. Clarke.

Before the appearance of the first volume of his Travels, and in the midst of the bustle of his public Lectures, there came another work from his pen, entitled "Marbles, &c., brought from the shores of the Euxine, Archipelago, and Mediterranean, and deposited in the Vestibule of the Public Library, by Edward Clarke, LL.D." It should seem at first sight, from the title of this book, that it was nothing more than an elaborate edition of his former work, extended to the other marbles in the collection, and chiefly calculated for the strangers who came to visit them. But he had higher views in the composition of it. In presenting originally these treasures to the University, Dr. Clarke was not actuated by a selfish desire of erecting in an honourable place, an isolated monument of his own travels, but by an ardent wish to stimulate others to similar exertions in the same career. In this view he always spoke of the marbles obtained by himself and Mr.

Cripps, as the nucleus of a collection which being gradually augmented by additions from various quarters, the voluntary offerings of other enterprising members, might some day confer dignity upon the University where it was placed, and by the illustrations it would afford of classical History and Poetry, might at once assist the studies and inflame the ardour of the youth who would have access to them. In this expectation he was not altogether disappointed. A Greek altar described by Tournefort in his Travels, and brought from the Levant by an ancestor of Mr. Harvey of Jesus College, was early presented to the Vestibule by that gentleman, who afterward added another of the time of Eumenes, King of Pergamus; and this was followed by other contributions transmitted by Lord Aberdeen and Mr. Walpole, the fruits of their own travels; but to shew more pointedly the degree of enthusiasm he had inspired, it may be stated, that several expeditions were planned and undertaken to Greece and the Archipelago (particularly one by Mr. Eustace and Mr. Petre), principally with a view to this patriotic object. To support and encourage the spirit which he had so happily laboured to inspire, and to communicate the lights and conjectures of learned men, respecting the monuments already collected, were the principal causes of this description of the Marbles being drawn up; and

with a corresponding liberality the University published it at their expense. The work was handsomely printed in large octavo, and contains four good engravings; three of the Ceres in the different periods of its existence, by Flaxman; and one a sketch of Eleusis by Sir William Gell. It includes also, Professor Porson's Translation of the Trilinguar Inscription on the Rosetta Stone, and a Letter from Lord Aberdeen upon the discovery of the Figure of Medusa's Head, as it is represented on the breast of the Eleusinian Fragment, on a tomb near Athens.

The fifth year of his Lectures had now passed, and it was clear that the effect produced by them in the University had exceeded the expectations of his friends, and amply justified the sanguine measure of success which he himself had predicted of them. He had quitted his notes and spoke extempore, and instead of growing dull and listless by repetition, the interest excited by his Lectures, both in his own mind, and in those of his auditors, became every year more animated and more attractive, as was evinced by the growing numbers of his Class, and by the increased attention and pleasure with which every new course was heard. But this success was not obtained without great labour and anxiety. Every year he prepared himself for the ensuing course, with as much earnestness as he had done for the first; and once an

interruption of six entire months is recorded in the composition of his Travels, during which he was wholly occupied by his Lectures, or in subjects arising out of them. In other respects, his own character and attainments gave him a great advantage; by means of his extensive correspondence both in England and on the Continent, and by the eagerness with which all his friends and pupils vied with each other in contributing to his information or his stores; he had always some new discovery wherewith to grace the opening of his Lectures, or some new facts or specimens to cheer the expectations of his hearers in the progress of them: while his bold and eloquent descriptions of the majestic scenes of nature, which the subject sometimes permitted, and his frequent and forcible appeals to the wisdom and benevolence of the Creator, leading them from nature up to nature's God, rendered his Lectures a source of delightful improvement to his pupils, quite independent of the instruction they were specifically intended to convey; insomuch, that his list was not only crowded every year with a new swarm of youthful candidates, but distinguished by the names of many of the initiated in the science, who had attended him from the very first. It is pleasing to read at this time, the numerous testimonies both from young and old, in letters and in other documents, of the approbation with which his Lectures

were heard, and especially of the moral improvement which was always acknowledged to have accompanied them. Nor was the reputation of his Lectures confined to the University of Cambridge: already he had been elected member of several Geological Societies, English and Foreign; and in the latter part of this year, 1811, he received an invitation from the Royal Institution, seconded by letters from two of its most distinguished members, Sir H. Davy and Mr. Warburton, to deliver a course of Lectures at their establishment. The proposal was agreeable to him in some respects, but it was strongly opposed by his friends, and for many reasons; the best of which was, that his time had already more claims upon it, than he could satisfy consistently with his health, and that if he had undertaken the task, it must have been at the expense of some duty, or by the suspension of labours infinitely more important to his family; he declined it therefore, and the determination was in all respects a wise one. But though he had the prudence to refuse this additional demand upon his time, he was not proof against another subject, which, coming suddenly upon him with an overwhelming influence, absorbed for a while every feeling and every faculty of his soul; this was the controversy of the Bible Society; an institution, which had carried on its operations for some time without exciting a great degree of attention in the

University till the close of this year 1811, when, in consequence of the decided manner in which two of its most distinguished members, Mr. Vansittart and Dr. Marsh, had entered into the controversy, and the strong but opposite views they had taken of it, it became at once a matter of general and animated discussion. In such a ferment it will readily be believed, Dr. Clarke was not likely to remain quiet, and without entering into the merits of a question which has so long been before the public, it may be affirmed, that it was impossible for any one who was acquainted with his character, to doubt for a moment which party he would espouse; he was not wont to be appalled by remote or obscure dangers in any course which he was tempted to pursue, but in the present case, when the means were so simple and benevolent, and the object connected with it so extensive and important, he held it almost criminal to hesitate; and while some with cautious prudence stood aloof awaiting the result, and others more decided, were yet averse from appearing prominent in the contest, Dr. Clarke announced himself openly an advocate for the Institution, and was prepared with his natural openness and ardour, to rush forwards on the first occasion into the very hottest of the battle. Nor was an opportunity long wanting: a meeting was called at Cambridge in December, 1811, for the establishment of a Branch

Bible Society, which was very numerously and respectably attended, and amongst others by Dr. Clarke. It appears from his letters that he came to this meeting, under a great degree of excitement, the result of long and powerful workings of his mind, by night as well as by day, which having been raised to a high degree of enthusiasm by the sympathies of a crowded assembly, burst out at last in a flood of eloquence which was declared by the friends of the Society, to have been the finest to which the subject had given birth, and allowed by the most indifferent, to have been wonderfully animated and energetic; and remarkable for many passages of great power and pathos, both well conceived, and well expressed.

Whatever difference of opinion has existed, or may still exist, amongst good men, respecting the Bible Society, there are few, we think, who would refuse their approbation to the motives and feelings expressed by Dr. Clarke in this letter:—

"Trumpington, Dec. 17, 1811.

"You can have no idea of what has been passing here. I trust I have seen the greatest and brightest day of all my life. The opposition to the Bible Society was so great, that they not only could not get a single Clergyman of known adherence to the Church of England, to support them; but even such

men as —— and —— took the general panic. That great cry, '*the Church is in danger*,' pervaded every heart. At half-past eight o'clock, the night before the meeting, it was asked me if I had courage to second the resolution. My answer was—'*try me!*' But I assure you this was no common trial. I had not a friend in the world to guide me. Even M——, the only one I saw, warmly opposed my doing it; —— thundered; —— threatened.—An immense fermentation was every where visible. Add to this, I had never read a syllable of the controversy, and in this state of mind, I walked home through darkness and pelting rain, to consider what I should say the next morning to justify the prominent situation in which I was to be placed. One thing aided me, that *my heart* was in the cause, and that the cause was a good one.

"This memorable morning came—never shall I forget it—nor, I trust, will our adversaries. I called upon M—— in my way. 'Latimer, and Ridley, and Chillingworth,' said I to him, as I opened the door, 'have been with me in my sleep, and I fear none of you.' He still persuaded me against the measure. All I asked was, that as I had in vain urged his attendance in the Town Hall, when I was not to appear there in any active manner, that now, as I intended to come forward publicly, he would absent himself. However, he then for the first time determined to be present. All the avenues to the

Town Hall were then crowded—no sooner did the doors open, than it was quite full. A deputation of four of us went to the Rose, for Lord Hardwicke, and we regained our seats with him, upon the rostrum, about 12 o'clock.

"Could I now but describe the grandeur and solemnity of this meeting. The most surprizing and overwhelming sight to me was that the faces of all that vast assembly, even of the young gownsmen, were seen streaming with tears of rapture. Of course, this was not neglected by one of our speakers, whom you may guess, and who with almost inspired energy called it, '*a contribution, every drop whereof was treasured in the phials of Heaven!*'

"Well! Lord Francis Osborne moved the resolutions, and I rose (God help me! thinks I) to second them. It is impossible to describe the animating shouts, with which I was encouraged—every sentence was cheered. M—— said the effect was such, he expected they should have all their windows broken. Letters with gratulations have poured in upon me from every quarter."

Shortly after this he entered more decidedly into the controversy, by a Pamphlet in answer to one from Dr. Marsh, upon the danger of disseminating the Bible alone; but here it will be confessed he did not appear with so much advantage as he had done before; the calm, watchful, and reasoning

mind required for controversy, was not his, and of this Pamphlet in particular it may be said, it was written with more haste than the gravity of the subject, or the acuteness of his opponent demanded; having occupied only forty-eight hours, printing included. It was, however, characterized by his usual spirit, and had a rapid sale, but with it his literary share in the controversy ceased. So long, however, as the struggle respecting this Society was actively continued, his voice and influence were in various ways exerted in its support; he entered into an active correspondence with some of its most eminent members, and assisted in the formation of several branch societies in the neighbourhood, particularly at Bury, Chelmsford, and Huntingdon; and wherever he came in the course of these exertions, he contributed by his spirit and eloquence to increase the popularity of the cause; and to add brightness to those rays of splendour which were spread around its rise. It is right to add, however, that he was always a zealous supporter of the Church, and afterward an active member of the Society for Promoting Christian Knowledge.

The year 1812 passed over his head like the two which had preceded it, in great happiness and prosperity; interrupted, however, by occasional fits of illness, from which he soon recovered. His Lectures had increased in profit as well as popu-

larity; his house was the resort of an accomplished and agreeable society, in which he took great delight; the second volume of his Travels had come out with greater éclat than the former, and with fewer assailable points about it; and besides the profits of his new living, a hundred pounds a year had been added to his income by the government for his Lectures; but what was to him the most important article in the account, Mrs. Clarke's health, which had declined after the birth of her first child, was now exceedingly improved, and she had brought him a second son. In some respects, however, his residence at Trumpington was by no means calculated to answer the expectations he had formed from it. Instead of that retirement he had expected, and in praise of which he was always so eloquent, his time was much less his own at this village than it had been at Cambridge, as the following extract of a letter to his biographer will abundantly shew:—

"TRUMPINGTON, Jan. 13, 1812.

"——Up to the ears—up to the eyes—in all sorts of quill-driving! Here—don't mind your shoes, walk in, and survey my table—a Preface for ———, to his Paper in the Linnæan Transactions—a ditto, for ——, his translation of ———— ; a dish of minced-pie, to be prepared from the materials afforded by ———— and

——— as an offering to the public from the ——— ;—sixteen letters—four proof sheets —a funeral sermon—two songs—and a riddle!— Then, by way of repose, to aid all this brewing, and give it leisure to ferment, hark! fiddles and Moresco dancers in the court for Plough Monday —Edward capering and screaming for joy—Smith's men carrying off my writing desk, to cure it of the rickets—two constables come for Johnson, to make him pay for faults which he did not commit—people calling—maids squalling—C—— bawling! Yet this is the solitude of Trumpington! and very ungrateful should I be, to speak but in its praise to you; for I may say, as the celebrated Abbess of the Paraclete did to Abelard—'Hujus loci tu, post Deum, solus es fundator!'——Yet, I will confess, I might dispense with something of what you lament the absence of—'the human face divine.'

"Have you made up your mind to send William to a public school? When I look at my little boy, I feel all the apprehensions which you must have felt, as to the consequences of exposing one so innocent to the probable dangers of a public school—the bad examples he may imitate —the vices he may learn—the kicks, and cuffs, and bruises, he may sustain: and, yet, when I reflect that we have never known an instance of a popular member of society springing from private

education; and *never, never,* from education at home; my mind is fixed for sending him to exile—to the great lottery; in spite of '*two blanks to a prize.*' I think, however, that William is yet very young for a great school—another year, or perhaps two, might do him no harm, in spite of all his mother's fondness. What sayest thou? I have sent you B——'s sermon to chew upon: it may serve to spur (what is it Hamlet's father's ghost says?) *your almost forgotten purpose.*"

There was also another more serious drawback upon his comfort, already anticipated, viz. the expensiveness of this house at Trumpington, of which he now began to be fully sensible; and having made the discovery, he determined upon the only wise plan which was reserved for him; viz. to quit Trumpington, to diminish his establishment, and to contract his society; and Professor Wollaston being about to leave Cambridge, he purchased from him the lease of his house, and removed his family to it in the spring of 1814. The resolution was not taken, however, without many struggles and considerable pain, and it was during this interval, when harassed with the prospect of pecuniary difficulties (which, after all, were much less serious than they appeared to be), and distressed at the thought of quitting a place which had been productive of so much happiness to him, that his early passion

for travelling took a temporary possession of his mind. "Since we are compelled to leave Trumpington," he said, "we might as well go to another hemisphere." Under this impression several schemes presented themselves successively to his imagination. Amongst them, one favourite object of his speculation, was the remaining MSS. at Patmos, and in the convents of Mount Athos. "Could I but bring home the MSS. from Patmos," he says in one of his letters of this period, "I should think that I had not lived in vain," and with a view to this, he entered into a treaty, first with government, and afterward with the Marquis of Sligo, for spending two years in the Archipelago, in search of antiquities, &c. But neither of these negotiations, which were strongly opposed by his friends, proceeded far; the minister, as appears from the correspondence, had hopes of obtaining these treasures at less expense to the public; and some other obstacle soon interrupted the second plan; but the report of his intended journey reached Athens,* and was received with so much

* That his activity and spirit, during his residence at Athens, should have left a strong impression upon the minds of the inhabitants who were acquainted with him, is not to be wondered at. "The Athenians," says he in a letter to his biographer, of this date, "keep up their old character; for they swore to Lord Byron, who is just returned from Greece, that I delivered an oration of Demosthenes from the Pnyx; and that this was done

confidence, according to Mr. Hughes, who happened to be there at the time, that Lusieri, an artist of eminence employed by Lord Elgin, who had a great regard for Dr. Clarke, absolutely put off a journey to Malta, which he was contemplating, on purpose to be upon the spot to receive him. A third scheme, connected with still more distant regions, was afterward entertained by him, and like the rest shortly fell to the ground; and before any other had suggested itself, the good genius of Angelica came to his aid; the restlessness of his mind was no more, and all was again serenity and contentment within him. By her taste, foresight, and management, and without any trouble of his own, he found himself at once so comfortably settled in his new house at Cambridge, surrounded with so many objects that were dear to him, and his household contracted into so small a compass, that he seemed no longer to have any thing to regret, or any thing to fear, and was not only reconciled to the change, but

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to try the effect of the voice in that place, which they said was astonishing. The whole of it is an invention. The Eleusinians shewed him the place where Ceres was; told him the ship went to the bottom, wherein the goddess was carried off; but that she would one day return. Lord B. is about to publish some poetical description of his travels. He told me the whole plan, which went in at one ear, and out by the other."

even highly gratified with it. His own picture of this magical effect of Mrs. Clarke's care, and of the 'couleur de rose' in which every thing appeared to him on his arrival, is quite delightful. 'We have, been settled in Cambridge about a week, and whatever you may have thought of our splendid château at Trumpington, I can assure you that I never felt truly comfortable before, since I set up business for myself. Angelica, to the amazement of all Cambridge, has conjured up quite a fairy palace for us. You never saw any thing more elegant than she has made our house. In the midst of my public Lectures, without my doing a single thing, she moved and packed all our concerns with her own hands. It was like a dream! One morning she took me to Cambridge, and landed me in the most comfortable study you ever saw, where all my books and papers are now arranged, and in perfect order. She has made all the hangings, curtains, beddings, carpets; and I left her this morning in the highest spirits, in the midst of her children. Such is, and has ever been my Angelica, 'whose price is above rubies,' and all that the earth contains, in my estimation, is not comparable to her! Our house is opposite to the open square of Catherine Hall, so that we seem to be in one of the great squares of London, and the fine grove of trees in front of that College keeps all the summer sun off from the front rooms,

and from the nursery; Edward and Paget are all day at the windows, delighted with the gay scene of so many moving objects. We have got a nice spare room for you and Charlotte, if ever you should come, which you must do if you mean to see either of us again; for we are positively determined to heave out the best bower anchor, and remain in port for the rest of our time. We are now screwed into an humble form, and I hope to continue so for life, as it is my intention, please God, never to emigrate from Alma Mater any more, unless to go to Paris, which I fear I shall not be able to afford." Nor was this a temporary feeling, arising chiefly from the agreeable surprise, which Mrs. Clarke had prepared for him; at several subsequent periods he wrote to his friends in the same strain.

Here, therefore, he remained, and henceforth thought no more either of removing or of travelling. Nevertheless, his anxiety about the MSS. did not cease, and it is creditable to him to mention, that through his means a considerable sum (five hundred pounds), was placed by the government at the disposal of a gentleman from Cephalonia, for the purpose of effecting this great literary object.

CHAP. IX.

The Friends and Correspondents of Dr. Clarke—Mr. Burckhardt and his Letters—Mr. Eustace.

THE narrative will now turn aside for a while from Dr. Clarke, to advert to other persons connected with him. Of his friends and correspondents it may be said without the slightest exaggeration, that they formed no inconsiderable portion of the persons whose learning and genius have shed a lustre upon their country during the last twenty years, and this, not in one department only, but in several; and if he had shewn as much regard for his own letters, by taking copies of them, as he did for those of others, by preserving them, they would have constituted together a body of correspondence as interesting and instructive as any which has been presented to the public in our memory. His curious and ardent mind, was ever stirring some question of ancient or modern learning, for which the course of study connected with his Travels or his Lectures, was constantly supplying fresh materials, as various as they were important, and it is only necessary to subjoin the names of some of the persons who took a share in

these discussions, to satisfy the reader how much both of light and interest the application of such minds must have brought to them.* Of these it is not intended to assert that every one was a regular correspondent of Dr. Clarke, although many of them were so in the most extensive sense of the term, but merely to affirm, that they all contributed in their several ways, and in a greater or less degree, to that mass of active information, which he was constantly employed in distributing,

* Besides the eminent names of Porson, Parr, and Burney, with Dr. Maltby and Dr. Butler, already mentioned, there appear in the departments of classical and philological literature, Mr. Payne Knight, Dr. Raine, Dr. Bloomfield, Professors Monk and Dobree, Dr. Kaye (Bishop of Bristol), Mr. Matthias, Mr. Weston, Archdeacon Wrangham, &c.; amongst persons distinguished by travel, or in the fine arts, Mr. John Hawkins, Mr. Malthus, Lord Byron, Mr. Walpole, Lord Aberdeen, Mr. Squire, Lord Valentia, Mr. Wilkins, Mr. Hobhouse, Mr. Banks, Mr. Burckhardt, Dr. Heber, Sir W. Gell, Mr. Hamilton, Major Rennel, Mr. Pennant, &c.; in chemistry, mineralogy, and natural history, Dr. Wollaston, whose letters are particularly kind and instructive, Mr. Tennant, Sir H. Davy, Mr. Wavel, Dr. Thomson, the mineralogical Professor at Aberdeen, Mr. Hailstone, Dr. Milner, Dean of Carlisle, Professor Kidd of Oxford, Mr. Holme, Mr. Lunn, Mr. Leslie, Dr. Brewster, Mr. Jameson, Sir W. Smith, Mr. Lambert, &c.; to these may be added, Mr. Edgeworth, Mr. Wilberforce, Dr. Nicholls, Arabic Professor at Oxford; amongst foreigners, Chevalier, Pallas, Haüy, Nœzen, &c.—This list does not include the names of many of his eminent friends resident at Cambridge, with whom his communications were chiefly oral.

through various channels, to the minds of others; for with him the delight of acquiring knowledge was only equalled by that of communicating it. Nor could there possibly exist a stronger testimony to his own candour, liberality, and intelligence, than that such a host of men, so variously gifted and endowed, some of them neither easy of access, nor prodigal of information, should have found it a pleasure for so many years to co-operate in his labours, and to interest themselves in his success: we say, found it a pleasure, for it is gratifying to observe, that the great bulk of these letters are as expressive of good-will and kindness, as they are distinguished by intelligence and learning; and the fact itself will be considered as one of the most remarkable features in the life and character of the man. The letters on Mineralogy consist of two large volumes, collected and bound up by himself, and would almost form a history of the science for the last ten years: those of Mr. Matthias, from Italy, are very numerous, and as remarkable for their classical taste, as for their playfulness and affection. Upon these stores it is not the intention of the author of this Memoir to intrude: happily most of the writers still survive, and if it were otherwise, even the most moderate use of their correspondence would lead him far beyond the limits and the object of the present work; nevertheless one exception will be made, in the

case of Mr. Burckhardt, an accomplished traveller like himself, whose letters will now be given, partly because they throw light upon his connexion with Dr. Clarke, which was highly honourable to both, and partly because, although possessing much interest, as well from the character of the man as from the circumstances under which they were written, they are not likely in any other way to see the light.

It has been affirmed in the Memoir prefixed to Mr. Burckhardt's Travels, that the bequest of his Arabic MSS. (the choicest collection in Europe) to the Public Library at Cambridge, was intended as a mark of gratitude for the literary benefits and the kind attention which he received there; the statement is undoubtedly true, but it remains to be recorded how much of the merit of these services is due to Dr. Clarke, and how happily in this instance, as well as in others, his exertions and character have tended indirectly to the credit of the University, whose welfare he had so much at heart.

Mr. Burckhardt was a gentleman by birth, as well as by education, and resided for a considerable time in Cambridge, both before and after his engagement with the African Society, in 1808; chiefly with the view of profiting by such opportunities as the place afforded for improving himself in natural history and oriental literature. He brought few re-

commendations, and from principle as well as inclination, lived exceedingly private and retired: nor was there any thing at that time, either in his conversation or manner, which was likely to strike an ordinary observer; for the dispersion of his family by the French Revolution, had added seriousness to a character naturally grave; and at all times his parts were more solid than specious. Dr. Clarke, however, soon found him out, and by every means which his own resources and his his situation in Cambridge supplied, endeavoured to give effect to his views, and to make his residence agreeable to him, as well as instructive. His house was open to him at all times—he procured him access to whatever books or persons were likely to be of service to him; and without wishing to detract from the kindness of others, and particularly from that of Dr. and Mrs. Marsh, to which Mr. Burckhardt himself always attached the highest value, it may be said, that most of his happiest hours were spent in Dr. Clarke's society, and in that of his family. Nor was his sagacity less remarkable with regard to this gentleman, than his kindness. He soon discovered in Mr. Burckhardt those qualities for which he has been since so distinguished, and was delighted to bring them forward to the notice of his friends; to whom he also frequently predicted that high degree of reputation which this traveller afterward attained.

How sensible Mr. Burckhardt was of this kindness, may be partly inferred from the fact of his having confided his MSS. to Dr. Clarke; but the letters now submitted to the reader will shew it more decidedly.

Mr. Burckhardt to the Rev. Dr. Clarke.

"ALEPPO, May 3, 1811.

"I might begin with a world of reproaches, but knowing as I do that nothing will ever change your fickle disposition, I wave my right of abusing you, and assure you, that notwithstanding your obstinate silence, my thoughts have often been with you, and dwelt on the remembrance of our friendship, which, against all appearances, I still am persuaded to be as sincere on your side as it is on mine. Do not, however, put my confidence upon too severe a trial, nor presume that you possess any means of making in future times amends for having thus trifled with the desire I have to hear of the welfare of my friends. Lady R. will have informed you of my tour to Palmyra. I have since not been idle. As soon as the government of Damascus, after the recent change of the Pacha, and a short internal war, had reassumed some degree of stability, without which the traveller is at the mercy of every miserable village Scheik, I

set out upon an excursion to Baalbec and the Libanus, along the highest summits of which, from the Cedres two days' journey southward, I returned into the fertile valley of Bekaa, or Coele-Syria. From thence I continued my way through the Druse districts of Hasbeya into the plain of the Houle, or the lake Samachonitis, where I visited the source of the river Jordan, and the ruins of the ancient Cæsarea Philippi, now called Banias; and returned afterward to Damascus, over the chain of mountains called Djebel Heish. The district of Hasbeya is interesting on account of its mineral productions. Little qualified as I was, fully to judge of them, I was merely busy in picking up specimens of rocks and minerals, in order to exhibit them to some true connoisseur. In the neighbourhood of Hasbeya are large wells of bitumen Judaicum. I likewise found there a mountain covered with pieces of fluor spar, and at another spot native amalgam of mercury. The whole chain of the Libanus and Anti-Libanus is of a primitive, calcareous rock; near the highest top of it, over the Cedres, I found a petrified shell. After my return to Damascus, I remained there three weeks, preparing and collecting information for a tour through a country, which, till a few years ago, had never been visited by any European traveller. I mean the country to the south and south-east of Damascus, which is still called by

its ancient patriarchal name, the country of Hauran. Mr. Seetzen, the German traveller, who is at this moment exploring the interior of Africa, to the south of Abyssinia, had seen five years ago part of Hauran, previous to his memorable tour round the eastern borders of the Dead Sea. The diversity of Arab tribes who frequent that country, make it of difficult access. I had, however, the good fortune to return unmolested, in the beginning of December, 1810, to my head-quarters at Damascus, after an absence of nearly four weeks. The Hauran is cultivated to the distance of about one hundred miles south of Damascus. Its inhabitants, in their dress and manners, and their frequent change of abode from one village to the other, are complete Bedoweens. The generality of them are Turks, but Greek Christians are likewise met with in almost every village, and the Druses have a settlement of about twenty villages in the mountains of Hauran. The good disposition one of the Druses' chiefs entertained towards me, enabled me to push forward into the desert, part of which, to the south-east of the Castle of Bosra, I traversed during a fatiguing march of four days, accompanied by three Druses and two Bedoweens. The mountain of the Druses, as well as the southern plain, is full of interesting ruins and remains of antiquity. I saw an amphitheatre in most complete preservation, several

elegant temples, a number of colonnades; and copied upwards of one hundred Greek inscriptions. Most of them are of the lower empire; there are, however, several of the time of Nero, Trajanus, M. Aurelius. On my way back to Damascus, I visited several villages which had a few months ago fallen a prey to the ravages of the Wahabee chief. You may have already been informed by the newspapers that Ibu Saoud, the present Wahabee chief, made in July, 1810, an incursion into the neighbourhood of Damascus: it was just about the time I arrived there from Palmyra. The inhabitants of Damascus, knowing the Pacha's feeble resources for the defence of the city, were so much frightened, that many began to send off to the mountain of the Druses their most valuable effects. The Wahabee, however, executed his design in the true Arab style. He remained only two days and a half in the Hauran, overran in that time a space of at least one hundred and forty miles, plundered and ransacked about thirty villages, and returned flying into the heart of his desert dominions. The Pacha had issued from Damascus with a corps of about six thousand men, but did not venture to hazard the chance of an engagement. Ibu Saoud was for several hours in view of him, but he contented himself with awkwardly firing off his guns. The Wahabees were for the greater part mounted upon she-camels, whose milk af-

forded in the desert subsistence to themselves, and to the few horses which accompanied them. Their strength was between seven and eight thousand men. It is to be presumed, that their success will tempt them to repeat their attack; the eastern districts of Syria will then rapidly be deserted by their inhabitants, and the desert, which is already daily gaining ground upon the cultivated fields, will soon swallow up the remaining parts of one of the most fruitful countries of the east. From Damascus I returned to Aleppo by Homs and Hamah, and completed my journey on the 1st of January, 1811.

"My health continues, thank God, to be as well, and even better than it ever was in Europe. My journey to Palmyra happened to be during the greatest summer heat; untoward circumstances obliged me to travel for forty hours, almost without interruption, upon a camel that was guided by an Arab, who comfortably sat upon the saddle, while I had nothing but my mantle to soften my desperate seat upon the camel's back-bone, behind the saddle; my blood was boiling, but my health continued as before. During my Hauran tour I suffered severely from almost incessant rains, cold and miserable diet; but bore it through, and look now forward with much less apprehension to the influence of African climes.

I am tolerably *au courant* in European politics,

and rejoice in the noble defence of Portugal and Spain; Buonaparte begins to shew signs of madness, in my opinion; he destroys his own wealth to make his enemies beware not to risk theirs, and the bonfires of English merchandize, all over the Continent, prove only his impotent rage. I have looked out in vain for the advertisement of your Travels; are they still in petto? Indeed, I begin to believe from experience, that it is a less fatiguing duty to perform travels than to write them down. I am astonished that no English traveller has yet made his appearance in these parts, since the peace with Turkey; the moment is as favourable now as it ever can be, and nobody needs be afraid of finding too much trodden ground. Syria still remains only half known, and Anatolia and Caramania, are known only as far as the caravan routes conduct the traveller. It has become a conviction with me, that travels in these countries, if pushed on beyond the great caravan roads, admit only of two modes to ensure the traveller's safety. He must either travel with a Pacha's retinue, to enforce his safety by his imposing countenance, and never ceasing presents; or else must throw himself as a poor devil upon the mercy of his protecting genius, and the good-natured character of the country people. Any half measures cannot fail to expose the traveller to numberless embarrassments; they

will even endanger his personal security, without forwarding in the least his projects.

"I find great pleasure in the study of Arabic, and confess that the oriental amusements of riding, bathing, and smoking, are likewise much to my taste. Summing up the history of my private life in Syria, I assure you, that I have passed as many pleasant hours in this country as I might have expected to enjoy in any other. The climate is so delightful, and its influence upon one's spirits so beneficial, that I shall certainly ever hereafter regret it."

Mr. Burckhardt to the Rev. Dr. Clarke.

"Damascus, May 30, 1812.

"If you had been conscious of the pleasure a letter of yours would give me, your friendship I dare say would have prompted you long ago to let me hear news of you. It is however not the less welcome for arriving late, for I can assure you that the perusal of your dear and long expected favour of the 27th of November, 1811, has been as gratifying to me as the sweetest draught of water after a summer's day's ride in the desert, which you will allow is saying a good deal. You are rather reserved in your letter about what interests me

more than any thing else, I mean your own situation. Were it not for Mrs. Marsh's letter, I should be ignorant of your being comfortably established at Trumpington, and of your having got a living. You were perhaps afraid I might immediately bespeak a room in your new palace; but you need be under no apprehensions of my so soon intruding upon you; my lodgings for several years yet to come, will be Arab huts and Bedouin tents. I wish you heartily joy of the general, I might say unparalleled, interest your Travels have excited, and the proportionate harvest in fame and wealth attending it, and hope that both may still increase by the publication of the second volume. As for your having mentioned my name in your treatise of Syria, I must freely tell you, that it does not at all agree with my wishes. It might seem as if I should like to have my name launched out into the world independent of the support of those to whom my time and labour is devoted. I owe to them alone what I am at present, and should be ungrateful not to give them exclusive credit for what I may become in future. I have avoided much correspondence in England, and cut short all correspondence with Germany, in order that the African Association might not suppose that I was hunting after reputation above that which they might be willing to grant me. If, therefore, you wish to oblige me, and to prove to

me that your friendship is due to Burckhardt, and not to the African traveller, you will henceforward keep my letters in private to yourselves, which I declare to you is the condition *sine qua non* of my future correspondence.

"Since I wrote to you last, which, if I am not mistaken, was from Aleppo, May, 1811, I have till lately been rather inactive. I remained the whole of last year at Aleppo, a journey into the desert excepted, which I undertook in September and October, in order to see the banks of the Euphrates. I visited Rehaba and Deyr (the ancient Thapsacus, of which nothing but a ruined bridge remains), but was prevented from pushing farther on; for the rascals of Deyr killed my camel, and a party of Arabs stripped me, literally to the skin, on my way from Deyr to Sokhue. The view, however, of the majestic river and its luxuriant banks, bordered as they are by the barren desert, is well worth any fatigue, and many discoveries of antiquity may still be made in that part of the desert lying to the north of the caravan route, from Aleppo to Bagdad. But travelling in these districts is subjected to many casualties, and without going to great expense for armed escorts, it is hardly possible to take an exact survey of the country. The time had now arrived for leaving Aleppo, and drawing nearer towards Egypt. I felt real pain in parting from my Aleppo

friends. Mr. Barker, the English consul, in whose house I had lived since my return from Damascus, is a most worthy and amiable man, of true English blood (which is scarce enough in the Levant), and possessed of much more talents than are necessary to fulfil the duties of his situation. Of Mr. Van Maseyk, the ex-Dutch consul, the same may be said, and his friendship is invaluable to the traveller, on account of his intimate knowledge of the Turks, their language and manners, in which he certainly beats most Franks established in the Levant. I left Aleppo in the middle of February, in company of Mr. Fiott, of St. John's, who had spent two months at Aleppo, where we had got well acquainted. We kept company as far as Tripoli, from whence he returned by Ladikia and Antioch to Aleppo, in his way through Asia Minor. As for myself, I proceeded southward; I visited the district of Kesröan, the only spot I ever heard of where superabundance of monks is no obstacle to industry; from thence I turned towards the mountains of the Druses, where I remained a couple of days at the Emeer Besheer's new-built palace, near Deyr el Kamir, and crossing the southern chain of the Libanus, arrived at Damascus towards the latter end of March. The Druses have lately grown into great consequence, keeping as they do in their hands, the balance between the Pachas of Acre and Da-

mascus. They are, in fact, the only nation in Syria, to which the name of commonwealth can be applied; they are free with regard to each other, but despots in their dealings with the other inhabitants of the mountains. If Syria is ever to emerge from its deadly slumber, it probably may be through the influence of the Druses. Headed by a man like Fakhr Eddyn, they might easily extend their dominion over the whole country, throw off their allegiance to the Porte, and regenerate the nation's deplorable state. But at present their government is weak, because they are commanded by the Emeer Besheer, a Turk, or spurious Christian, whom they dislike, and whose salutary operations they are constantly endeavouring to impede. All these speculations, however, are mere dreams. Let a Turk, Druse, or Levantine Christian govern Syria, the state of the people will still remain the same, or rather will grow daily worse, as long as the principles of government do not change. It knows of nothing but extorting money; the subjects are wont to see a tyrant in every new master; no recollection of a happier state rouses their souls; no knowledge of what government ought to be, pervades their minds; they look on things with stupid, passive indifference, as if the Creator had willed them to serve only for the caprice of their masters; it is even to be doubted, whether the generality of the

inhabitants would relish a government rigidly severe and impartial in the distribution of justice. It requires but a superficial knowledge of the wretched character of the unprincipled Syrians, to be persuaded that, if for instance English laws were to be introduced in this country, half of its population would within the first six months become settlers of Botany Bay.

"It had been since last year my wish to complete my survey of the Houran; I therefore visited that country for a second time, and it is now about a fortnight that I am returned to Damascus from that excursion; I saw those districts which I had not passed over in 1810, and pushed from thence forwards as far as the Wady Zerka (probably the Jabok, the frontier of the Ammonites, in the Decapolis). The remains of the ancient town of Djerash (Gerasa) in the mountains of Moerad, situated at a short distance from the Jabok, might almost be compared with those of Palmyra and Heliopolis, if the beauty of its architecture was equal to the extent of the ruins. There are, however, two very handsome temples of the best time of Roman architecture; the construction of most of the other remaining buildings appears to be of later date; two amphitheatres, several palaces, two bridges over the Wady Keroan, large gateways, and above all a long street lined with columns, leading to a half circle of fifty-seven still remaining Ionic pil-

lars, in front of the great temple's hill, powerfully claimed my admiration. Upwards of 190 columns in perfect preservation, are dispersed over the city, which appears to have been built after the model of Palmyra. I only found four Greek inscriptions, one of Adrianus, one of M. Aurelius; many others will doubtless in future be found there; but my time was not at my own disposal during my stay at Djerash; the fear of the strolling Arabs had such powerful effect upon the minds of my guides, that they would have left me alone with the gods of Gerasa, if I had tarried a few minutes longer. After a short circuitous tour, I descended into the valley of the Jordan, near where that river issues from the lake of Tiberias. The river Sheryat el Mandhoor (the Jarmouk of the Holy Scripture, and the Hieromax of the Greeks) empties itself into the Jordan a few hours below the lake; in its narrow valley, up the mountains to the east of the Jordan, are ten hot sulphureous wells, close to the river's banks, and on both sides of it; above the most western of these wells, to the south of the Sheryat el Mandhoor, upon an elevated mountain, are the ruins of Omkeis (perhaps Gadara or Gamala), with two amphitheatres, and immense heaps of fragments of columns; but no columns remain standing. I remounted the eastern chain farther northward, and returned to Damascus through the district called

Djolan (perhaps Gaulonites), which together with Hauran is the granary of Damascus.

"I hope to see the remaining part of the Decapolis, in a short time hence, in my way towards Arabia Petræa, and Egypt, for I intend setting out from here in two or three days; I shall then take my final leave of Syria, a country where I have spent many happy hours, and which I might wish to visit once more again.

"In answer to your queries about pointed arches, I must tell you that what I have seen of ancient architecture in Syria, is rather against your opinion; the ruined buildings of the last times of the lower empire, about the mountain of St. Simon Stylites, those of Djebel Richa, of the eastern desert (like Andereen), and of the Hauran, have all round arches; the ancient remains of Saracen architecture, consist in castles built for the greater part during the epoch of the crusades, which have certainly pointed arches, but their construction is posterior to the introduction of the Gothic style in Great Britain. The castles of Banias, Bosera, Rabbad, Meszyad, Sadjar, Hossn, belong to this period; the latter, which is situated near the road from Hamah to Tripoli, is remarkable for a beautiful Gothic hall, most of these castles owe their origin to the prudent spirit of defence adopted against the Franks by Salah Eddyn; or to the cautious despotism of Melek el Dhaher, the conqueror of Syria; the exact epoch of whose

reign, in the eleventh century, you may find in d'Herbelot. Other castles of more ancient structure like those of Aleppo, Homs, Salkhat, which have pointed arches, have been repeatedly retouched, and it is difficult to decide to what epoch the arches belong; the towns on the coast, of which I have seen very little, ought to be examined in order to answer your question.

"I humbly offer my grateful thanks to Mrs. Angelike (shall I say Kaufman or Clarke?), for having taken the pains of etching my bearded head; the satisfaction I feel is not from the vanity of knowing myself existing in print, although to confess the truth that is flattering enough, but from the conviction I thus derive of your and Mrs. Clarke's often remembering me, which indeed I fully deserve for the friendship I bear to you both. If you believe me you will bring up Hotspots* to be as great a traveller as yourself, for the life of a traveller is certainly a happy one, so long as success and return home may be expected; I hope to arrive in England in time to make an Arabic scholar of him; we shall then send him from Eton to the Wahabee court, to wrangle with the students at Derayeh, and leave it at his option afterward, either to become a fellow of Jesus College, or an Olema at Medineh.

"No English travellers have for these last two

* D. Clarke's eldest child.

years been in Syria, excepting Mr. Knight and Mr. Fazakerly in 1811, who visited Jerusalem, the mountain, and Damascus; Mr. Fiott, who has seen the whole of Syria, together with Palmyra; Mr. Wynne, brother to Sir Watkin, who left Damascus a short time before my arrival; and Mr. Boughton who is at present at Aleppo, after having gone over the greater part of Syria. I just hear that the Honourable Mr. North is arrived at Tripoli, and that Lady Chatham has reached Jerusalem; it is not probable that I shall meet either of them. English travellers ought to begin their excursions with Syria, not with Egypt, for many reasons. It were to be wished that instead of going the common caravan roads, every traveller should make it a point of visiting some unknown places. What remains unknown in Syria, even after Seetzen's travels may be published, is the mountain chain of the Anzeyry, on the west side of the Orontes, from Antioch towards Hamah; the chain of the Anti-Libanus; the northern declivity of the Libanus towards Belad Akkar; the country of the Metawelys above Acre; the course of the Jordan; besides many places in Palestine. I have constantly been in expectation of hearing of the arrival of a Palestine traveller, he would still find plenty of business, and room for discoveries.

"I have been very unfortunate in Syria, on

account of want of classical books. I did not suppose at my departure from England, that I should be able to travel about in Syria, peace being not yet concluded at that time between England and the Porte; and therefore neglected to take such notes as might facilitate my researches in that country. The only library at Aleppo, is that of Mr. Ronsuan, the French consul; who possesses the Classics without either knowing Latin or Greek; as he has however taken it into his head, to become a scribbler and sçavant himself, he is so jealous of the means he possesses to advance the literary labours of others, that he never lets his good books stir out of their place. He is a good Persian scholar, and knows Arabic and Turkish, being born at Bagdad, and educated by Persians; but is a most clumsy genius, and ungentleman-like man; mean jealousy of my pursuits made him prevent the best Arabic scholar of Aleppo from giving me lessons. In order to take my revenge, I have done my best to persuade Mr. R. to go on in his bookmaking business, knowing this to be the best means to ridicule himself. The French Consul at Tripoli, Mr. Guys, has a fine library, is a man intimately acquainted with antiquity, and especially with Syrian antiquity; his collection of Syrian medals is extremely interesting, and he is a most liberal and gentleman-like man; it was in his library that I took my notes on the Decapolis."

Mr. Burckhardt to the Rev. Dr. Clarke.

"CAIRO, Nov. 20, 1812.

"My last to you was dated in May, from Damascus, in answer to your kind favour of November, 1811. As I sent it by a good opportunity, via Tripoli to Malta, I hope it will have reached you long ago. I have since executed my project, mentioned to you in my last letter, viz. of entering Egypt by a circuitous route along the eastern borders of the Dead Sea, and the mountains of Arabia Petræa. Had I any interesting news to give you from this quarter, I should forbear to talk exclusively of my own performances; but this not being the case, I shall trouble you to take a map into your hands, and to follow my steps from Damascus to Cairo.

"I left the former city on the 18th of June, a few days before the Honourable Francis North arrived there, who has since been all over Syria. My first station was Tabaria, on the lake of Genesareth, interesting for a numerous colony of Jewish devotees. Its famous hot baths were at half an hour's distance from it, near the ruins of the ancient Tiberias, which are beyond the precincts of the present town. I visited from thence the borders of the lake, and Mount Tabor. Having unex-

pectedly met with Mr. M. Bruce, of St. John's, to whom the mentioning of your name served me as an introduction, I was persuaded to go with him to Nazareth, where I had the honour of seeing Lady H. Stanhope, who had arrived a few days ago from Jerusalem and Acre. She has since been to the mountains of the Druses and to Damascus, while Mr. Bruce has gone to Aleppo. They were to meet again in October at Palmyra. After a stay of a couple of days at Nazareth, I left that town in company of some Arab pedlars; I returned to the banks of the Jordan, and followed the course of that river for nearly two days, in a fine valley, which begins at the lake of Tiberias, and continues down to the Dead Sea. The ruins of Bysan (Scythopolis), Succoth, Amata (Amatha), are in this valley, which is called El Ghor, and is inhabited only by Bedouins. Many rivers descend from the eastern mountains into the Jordan, the drincipal of which are the Sheryat el Mandhoor (Hieromax or Jarmouk), the Wady Yabes, and the Zerka (Jabok). I then ascended the eastern chain of mountains to the south of the Zerka, which divides the district of Moerad from that of Belka, as it formerly did the tribe of Gad from Reuben. The only inhabited place in this district is Szalt, an ancient castle, probably Salton, the seat of a bishopric in Palestina III[a]. Its inhabitants live for six months of the year under tents, and pasture

their cattle in the neighbouring mountains. About eighteen miles from hence are the ruins of Amman (Philadelphia, Civitas aquarum), where I saw the remains of a castle of remote antiquity, several temples and palaces, a fine amphitheatre, the largest of the seven buildings of that species which are met with in the mountains to the south of Damascus; but the whole is much inferior to the ruins of Gerasa, which I mentioned to you in my last letter. I then proceeded southwards along the upper plain of the Belka, which is inhabited by Bedouins only. It is limited, seventy miles to the south of Szalt, by the deep, rocky bed of the winter current, called Wady Modjeb (the Arnon of the Scripture), on the other side of which the district of Kerek, or Moabites, begins. The ruins of Gilead, Jazyr, Esbon, Eleale, Bethmeon, Medaba, Dibon, Aroer, Rabbah Moab, or Arcopolis, and many others illustrate the history of the Israelite and Roman settlements in the territory of Gad and Reuben, or Arabia Petræa. Kerek is a considerable Bedouin town, about thirty miles east of the southern extremity of the Dead Sea. Its inhabitants, who muster about eighty horsemen and eleven hundred matchlocks, of which one-fourth are Greek Christians, have submitted to pay tribute to the Wahabees. I met there two tax-gatherers, who had just arrived from Medineh, where Ibn Saoud then was. The rascality of the

sheikh of this place, who stripped me of the greater part of my money, prevented my visiting the eastern borders of the Dead Sea, and delayed my stay here for twenty days. But the town, whose inhabitants are true Bedouins, being the centre of Bedouin politics in these parts, I found means considerably to increase my knowledge of that interesting nation during my residence at Kerek. It was with difficulty that I got on southwards. The Wady el Ahsa, likewise called Safye, divides the territory of Kerek from that of Djebal (Gebalene), where I visited the villages of Ayme, Tafyle, Beseyra (Psora), Dhana (Thoana), all of them inhabited by Bedouins who have become cultivators. Excellent fruits grow here, and the climate is most agreeable in these mountains (Palestina III[a]. was likewise called Salutaris); but the heat down in the valley, which is a continuation of the above-mentioned Ghor, and is called here Araba, is suffocating. The manna, called by the Arabs of the Ghor Assal Beyrook, drops in their woods from the tree Gharab: the Arabs eat it upon their victuals like sugar, and make cakes of it. The bird el Katta, the shape of a partridge, but smaller, is met here in immense swarms; the Arab boys kill them by throwing sticks at them; I take it to be the Sekoua, or quail of Beni Israel. The territory of Djebal is limited by Wady Ghoeyr, on the south side of which begin the mountains of Sherah,

which continue for three days' journey southward, until they approach the plain of Akabah (Ezion-geber, or Ailah), on the Red Sea's eastern branch. They are the mountains known in sacred geography by the name of Mount Seir, the territory of the Edomites. The castle of Kerek el Shobak (probably Carcarice) is a fine building of the time of the crusades, situated near Wady Ghoeyr. One day to the south of it is Wady Moosa, a narrow valley, on the west end of which the tomb of Haroon (Aaron) is shewn, upon a high mountain. The ruins of a considerable city in this wady, surrounded by perpendicular sand-stone cliffs, appear to be those of Petra. There are several hundred large and elegant sepulchres cut out in the rock on the wady's sides, with some beautiful and colossal mausoleums, in which the Grecian and Egyptian styles of architecture seem to meet. The ruins of temples and palaces, an aqueduct, an amphitheatre cut entirely out of the rock, and other antiquities, render this spot of great interest to history as well as to the fine arts. Its situation near the abovementioned great valley, which is the easiest caravan road from Jerusalem to Ezion-geber (its colony), must have made it the emporium of the trade carried on between the Red Sea and Palestine, after Solomon had established his trade to Ophir. I believe myself to be the first European traveller who has visited these districts

south of Kerek. Mr. Seetzen went from Kerek straight to Jerusalem. The fear of being ill-treated, and of exposing even my safety, prevented my pushing on as far as Akabah. The Pacha of Egypt keeps there a numerous garrison, to watch the proceedings of the Wahabees, and of his rival Pacha of Damascus. I was known by the Bedouins as a native of Damascus; my arrival at Akabah might have, therefore, excited much suspicion, and I had no means to prove, in case of necessity, by any passports or papers, that I was a Frank. I exchanged near Shobak my mare against a small herd of goats, for the Bedouins have seldom any cash, with which I wandered from camp to camp, in order to find a guide for Egypt. Having at last procured one, after having been tricked out of half the number of my goats, we were informed that some Bedouins were preparing to set out for Cairo, where they intended to sell their camels. We repaired to their encampment near Maan, a station of the Syrian pilgrim caravan to Mekka, and joined their little caravan. We crossed the mountains of Sherah a second time, passed the Araba, which is a sea of sands, and hurried by forced marches along the desert called el Ty. We left Rakhel (a station of the Egyptian pilgrim caravan to Mekka) at a short distance from us, passed to the north of Suez, and arrived at Cairo after a journey of eleven days

(from near Maan), of great fatigue and no less danger, on the 4th of September.

"Thank God! I continue to enjoy good health, and have not felt a moment of illness during the whole time of my journey, although the heat in this time of the year was often suffocating; and that, though I underwent great privations from want of food and water, and, what is infinitely more painful, from want of cleanliness; for I had been obliged to sell all my linen in order to buy provisions. To have thus repeatedly tried my constitution, and found it answer my purpose, is a powerful incitement to pursue my task, nor shall I ever think of returning to Europe before I shall have completed it.

"There is no chance of my getting off from hence into the Libyan desert for some time. But I hope to employ in the meanwhile my time to some advantage. I shall follow the course of the Nile into Nubia, beyond the cataracts towards Dongola—a voyage upon which I shall start in a few weeks, as soon as the canals are dried up; for I wish to make the journey by land. On my return, I hope to receive some of your favours, for I hardly enjoy any other pleasure in this country, than the hope of living in the memory of my friends, besides the satisfaction I derive from the success of my travels, and the sentiment of performing my duty.

"No English travellers are at present in Egypt. The Pacha's expedition against the Wahabees appears to be very near its ultimate success; his army is before Medina, the greater part of the inhabitants of which are gained over to his side. He is a man of great spirit and energy; if he succeed in Arabia, he may prove a second Napoleon of the East, and will have the advantage of the latter, to have the whole interest of the church in his favour. I have about two hundred Greek inscriptions, which I shall send you some time hence, with my compliments to Messrs. G. Brown and Hollingworth. They are all ineditæ, and many of them are interesting for history and geography. I receive from time to time letters from Renouard. Mr. Gell, I understand, has taken winter quarters at Rhodes: how often did I not envy him his pencil, during my last journey!"

"Esne in Upper Egypt, October 18, 1813.

"I shall give you up entirely, if at the receipt of this letter you do not blush for neglecting so shamefully, a person who is so true a friend of yours; but your face, I dare say, has already got brazened by your obstinate silence, and if thus, I am afraid it must come at last to a total, mutual withholding of all tokens of remembrance;

in the mean while, I shall mention to you, that I wrote to you last from Cairo, I think in November, 1812, giving you an account of my tour through Arabia Petræa. I started again from Cairo, on the 11th of January, accompanied by a trusty Fellah servant of Upper Egypt; the canals were already dried up, our jackasses carried us therefore without any difficulties across the country, of which I shall say nothing, neither of its antiquities, but just express in passing, my opinion that the most magnificent ruins of Egypt bear no comparison with the splendour of the remains of Palmyra. Towards the end of March I arrived in the neighbourhood of the Cataract. I left my servant at Assouan, with all the unnecessary baggage; hired a Nubian Arab, whom I mounted upon one of my dromedaries, and thus entered Nubia, with a degree of curiosity much superior to that which had led me to undertake my late journey through Arabia. After five days' journey we reached Derr, the present capital of these parts of Nubia, and the residence of the three brothers the sons of Soleyman Kashef, who governs the country from Assouan up to Dongola. I had some difficulty to be permitted to proceed farther on; I was taken for a spy of the Pacha of Egypt, and the governors of Nubia secretly adhere to the interests of the Mamelukes, who have lately conquered Dongola. Ibrim, a miserable, at present ruined castle, is

situated upon a barren rock, sixteen miles above Derr; eighty miles farther I arrived at Wady Halfa, where I had a view of the second cataract; this is just as insignificant as that of Assouan. The country I had passed through till now was very much like the narrow Nile valley in the neighbourhood of Assouan; the shore is tolerably well cultivated, the river is lined by woods of date-trees, the produce of which is the principal article of commerce between Nubia and Egypt; the inhabitants, divided by their language into two different nations, the Kenoos and Noobas, are descendants of ancient Bedouin tribes of Arabia, who followed the Mahomedan conquerors into Egypt, and spread along the borders of the river as far as Dongola; they are an independent race of men, kind and hospitable to strangers, but in continual skirmishes among themselves, about the blood revenge. The mountains which till now had always run parallel to the river, close at Wady Halfa, and a wild, rocky district, called by the natives, "Batn el Hadjar," or the womb of rocks, begins, where the irregular stony bed of the river forms numerous islands and cataracts; huge masses of granite, porphyry, feldspath, grauwacke, quartz, &c., compose this dreary desert, which it took me four days to cross; it is a dangerous road on account of the incursions of the Arabs called Sheyga, who often waylay and plunder here the travelling

Nubians. On the southern side of Batn el Hadjar the country opens, and the river flows again in a valley; I passed here the district of Sukkot, beyond which lies the large and fertile island of Say, with an ancient Saracen castle; and forty miles farther I reached the country of Mahhass, inhabited by blacks, whose slave caravans depart every year twice for Cairo; Tinarah is the chief place in Mahhass, about four hundred and fifty miles distant from Assouan, and forty or forty-five miles from the limits of Dongola. Round the mud castle of Tinarah I found a Nubian army encamped, which had been besieging a rebel chief, and had obliged him to surrender the evening before my arrival; two of the governors of Nubia had come here to inspect the siege; when I entered the camp, I witnessed the rejoicings of victory, large goat skins full of palm-wine and palm-spirits, were distributed among the soldiers, and the discharge of loaded muskets, the throwing of lances, and beating of shields, soon announced that the skins had been emptied. I was badly enough received; the question was agitated among the drunken chiefs, whether my person or my head only should be sent to the Mamelukes, two of whose Beys were during that very time travelling along the western shore of Nubia; I however got off, and hurried back; there being no boats in this country I was obliged to swim at

Sukkot with my camels across the river, in order to see its western banks, after I had heard that the abovementioned Mameluke Beys had already passed by, and I returned along the river to Assouan, where I found my honest fellow of a servant in a great bustle, for the people of Assouan had shewn a ready disposition to plunder my effects, supposing me to be a deserter of the Egyptian army, and to have joined the Mamelukes. Nubia is very rich in antiquities; Egyptian temples are met with all the way up the river, as far as Mahhass; the infancy of architecture shews itself in large subterraneous temples or caves hewn out of the rock, and adorned with Colossal statues of Osiris and Isis, much in the same style as the grottos where the Indians adore their gods; temples of small dimensions are met with even among the barren rocks of Batn el Hadjar, and the islands of that district are full of brick ruins of small castles, which appeared to me to have belonged formerly to those enemies which were routed and pursued to their holds by the triumphant hero of Egypt, as represented in the battle pieces on the walls of the different temples at Thebes. I have copied some Greek inscriptions which settle the site of the ancient Nubian cities as far as about one hundred and twenty miles above Assouan; farther upwards the country appears to have remained unknown to the itinerary of Antoninus at least, but there are num-

berless ruins of Greek churches, and small convents of the lower empire, all the way up to Sukkot.

If any Cambridge men undertake hereafter the journey into Egypt, advise them to push on as far as at least the second cataract; between Ibrim and Wady Halfa is a fine temple at Besambal (a Greek name for "bab" i.e. polis), with four immense colossal figures cut out in the perpendicular side of the mountain; Besambal ought to be the term of those who visit Nubia by water; to get on farther, camels are necessary, which are not easily to be got south of Egypt, but are best to be purchased at the market of Esne; if the government of Mohammed Aly, Pacha of Egypt, acquires stability, the journey into Nubia will become as easy and safe, as that of Upper Egypt is at present; but as long as the Mamelukes retain their possessions in Dongola, the country south of Wady Halfa ought not to be visited by gentlemen who travel merely for their pleasure.

"I returned from Assouan to Siout in order to recruit my finances, and revisited then a third time Upper Egypt as far as Esne, the small country town from whence these lines are dated. I hope to start in a short time for the Nubian mountains, in a more eastern direction than I took last spring; I shall reach some harbour on the Red Sea, and return, if possible, to Cairo along the Arabian coast.

"Excepting a few payprus rolls, I have taken up no articles of antiquarian curiosity in Upper Egypt, but I have purchased several valuable manuscripts at Cairo; every thing of antiques is exceedingly dear; medals may be had cheaper in Covent Garden streets than among the peasants of the Thebaide.

"If you did see me writing this letter, you would willingly apologize for its lazy style; I am sitting in a half open court yard, upon a straw mat, supporting this leaf with my left hand, while my two dromedaries, my jackass, my servant, and a swarm of mosquitos, leave me not a moment's rest. And still I find an hour's time to tell you that I am among the living, while you, lazy creature, comfortably seated in a cool room, behind your bureau, in an arm chair, have become so stingy of your leisure time, as to make it impossible for you to throw away five minutes, in order to let me know how things go on with you."

"Cairo, July 10, 1815.

"The pleasure I felt at my safe return to this city on the 17th of June last, was much increased by the receipt of your dear favour of the 9th of August, 1814, which Colonel Missitt had kept for a considerable time in his hands, having

desired him to do so with all letters that might arrive to my address; they were too dear to me to expose them to the chances of a Red Sea navigation. It is with infinite satisfaction I learn that you and your family are well, and that you are surrounded now by such a number of little ones as to furnish one to the public travellers for all four parts of the globe.

"I shall endeavour to answer your architectural questions during a visit to Alexandria, which I have in view, as soon as my health permits it. In the meanwhile I shall tell you that there is a large room in one of the pyramids to the south of the great ones, commonly called Pyramids of Sakkara, the roof of which consists of one large pointed arch, the two sides of which form an angle of about sixty or sixty-five degrees. I saw no pointed arches in the Hedjar, where I paid particular attention to the ancient buildings at Mekka and Medina. The arches seen there are generally Gothic, a very few Saxon; but the rains, joined to the friability of the stone, and the bad cement used in the structure of all houses and public edifices, have destroyed all vestiges of ancient architecture, and, I venture to say, that at Jidda, Mekka, Tayf, Medina, or Yambo, the only cities of that country, there is not a single building more than three or four hundred years old.

"I think I wrote to you last in October, 1813,

from Upper Egypt. My departure from that country was unfortunately delayed until February, 1814, when I started at last with a small caravan destined for the slave-market of Sennaar. We crossed the great Nubian desert of which Bruce has given such a terrible description, probably, in order to prevent any succeeding traveller from again examining the tract he went over, and reached the Nile again, near the very place from whence Bruce had started for the desert. I followed the river up to Shendy, which has become now the principal slave-market, and mercantile town for the surrounding Negro countries. It was not Bruce's Madame Sittina (Sittina in Arabic means nothing but 'our lady,' a term made use of to the mistress of every house, from the highest to the lowest), but a rascally black who sat then upon the throne of Shendy, and who stripped me of my gun, sending me in return a dish of meat from his own table. In following the caravan route to Sennaar, and from thence to Gondar, into Abyssinia, routes which are much frequented by traders, I might easily have performed Bruce's African journey, but I wished to explore unknown districts, and therefore turned from Shendy eastward, in order to reach from thence, if possible, Massouah, the Abyssinian sea-port, and to examine the northern Abyssinian provinces, where I might have found the descendants of the Troglodytes. Another

project likewise called for my attention. It was the same you shortly mention in your letter, viz. that of following the banks of Bahr el Abiadh up to its source in the White Mountains. (Djebel el Kumr as they are called in Arabic, is rather to be translated by 'White Mountains,' than by Mountains of the Moon: they are probably covered with snow.) This would have been a tour of great importance and interest, but the information I collected at Shendy shewed me the great and imminent dangers which would have attended that expedition; and according to the rule I have constantly acted upon during my six years' travels, that of not venturing upon journeys where the chances of success were against me, (the instructions I received before leaving England having pointed out to me, middle Africa as the desired object of my mission, for which journey I therefore was obliged to reserve myself); and taking into consideration this reflection, I abandoned all farther idea of piercing into the interior on this side, and leaving Shendy for the east, reached the fertile banks of the river Atbara (Astaboras, the same word), which I followed southward for about one hundred and twenty miles, thus approaching Sennaar to five or six days' journey. I saw here ruins of the largest dimensions, and of the remotest age, but unfortunately circumstances produced by imminent peril of attack, prevented my examining them. I then

reached the country of Taka, a name which you will find upon the maps of Africa, but ill placed. The country of Taka is inundated every year, about the end of June, by torrents coming from the Abyssinian mountains, and produces an abundant crop of Millet, or Dhourra. Its inhabitants are different populous tribes of Bedouins, among which the Hallinga are the strongest. Their numberless herds of camels and sheep retire for pasture towards the southern mountains, as soon as the harvest is over. The language of all these Bedouins is that of the Bishareen, the Arabs who inhabit the Nubian Mountains, from Assouan up to the Atbara; it is in use as far as the frontiers of Walcait, the northern province of Abyssinia. I remained for several weeks with the Hallingas, and the knowledge I acquired of their character, made me give up all hopes of being able to proceed towards Massouah. The treachery of these people is without bounds, and renders it quite impossible to cross the country with baggage of the smallest value, in order to defray the expenses of the journey. Your very guide, bound by the oath most sacred to him, will strip and kill you, as soon as he finds a safe opportunity. I should therefore have had no objection to divest myself of all my baggage and trifling merchandises judged valuable in this country, if I might have supposed that travelling like a derwish, or beggar (which, taking all toge-

ther, is the most comfortable way of travelling in dangerous districts), could have ensured my safety. But the rascally Nubians join to their want of good faith, that of hospitality. Not a drop of milk nor a handful of Dhourra is ever given by the wealthiest shepherd to a hungry stranger. Even those poor Negro pilgrims who come from the shores of the Atlantic, and pass here on their way to the holy city, are obliged to pay for every meal. A person, therefore, thinking of being able to beg his way through these inhospitable tribes, would certainly in a few days perish of hunger; a consideration which will certainly be deemed powerful enough to apologize for my not having ventured to proceed in my plan. I was glad to find an opportunity of quitting Taka, in taking a northern direction, and proceeded in company of a caravan, loaded with Dhourra, towards Souakin. We crossed the chain of high mountains, called Langab, to the south of which we had continual rains (in May), while the hot Simoom wind was reigning on the northern side, and arrived in the beginning of June at Souakin, a well-known sea-port of the Red Sea, whose inhabitants import yearly upward of three thousand slaves from the interior of Africa into the harbours of Arabia. Having with some difficulty escaped the avidity of the Turkish custom officer of Souakin, who was ready to declare me for a Mameluke coming from

Dongola, in order to rob me of a faithful slave, the only thing of value left to me, I embarked on board a country boat, and reached Jidda in July, after a very tedious sea voyage, in the course of which we touched at the celebrated Emerald Island, now called Djebel Mekowar, a barren, rocky place, inhabited by a few families of Bedouin Ichthyophagi.

"My Arabian journey was not so fortunate as the just described African one. The climate of the Hedjaz, and the bad water which is met with there had a very pernicious effect upon my health, which, under the greatest fatigues in Africa, had never abandoned me. I travelled with much more ease and comfort in Arabia, than I had done before; yet was no sooner arrived at Jidda than I had to cope with a violent inflammatory fever; at Mekka I suffered severely from the dysentery, and a quotidian fever kept me for three months in my room at Medina, and weakened me so much, that it was with no little difficulty that I was able to reach Cairo. I am now in a convalescent state, but during the hot season strength is not easily repaired, and it may probably take me a couple of months until I am completely restored.

"During my stay in the Hedjaz, I visited Mekka, Jayf, Medina, and Yembo. The war then carried on in those countries by Mohammed Aly, Pacha of Egypt, against the Wahabees, prevented my

visiting from Tayf, the fertile mountains extending towards the Yemen, which are the seats from whence most of the Bedouin tribes of Arabia have sprung, and where the ancient Bedouin manners are still conserved in all their purity. I remained several months in Mekka, a dirty town of almost thirty thousand inhabitants, situated in a complete desert, and performed in November, 1814, in company of about eighty thousand pilgrims, collected here from the farthest west and east, the pilgrimage to Mount Ararat, six hours from Mekka, which constitutes me now Hadgee, and shall serve me in future as the most powerful and efficacious recommendation, in travelling among other savage Mohammedan nations. In January I proceeded through the interior of the country to Medina, twelve days' journey from Mekka; it had been my intention to remain there a few weeks, and to return then overland, through the desert to Cairo, examining on my way the extensive ruins said to be at Hedjer, six days' journey north from Medina, the existence of which is attested by several passages of the Koran, and belongs to the remotest times of Arabian history. A few days, however, after my arrival at Medina, I was taken, as I already mentioned, with a fever, which continued its uninterrupted course for three months, and had already made me despair of ever seeing my friends again. As soon as I found myself a little better,

far from being able to undertake a fatiguing desert journey, I dragged myself to Yembo, a harbour five days' journey distant from Medina. Nearly three weeks were spent in that town, until I could find a passage for Egypt, and most uncomfortably did I pass that time, for the plague had just begun its ravages there as well as in Jidda, both which towns have almost been depopulated. This disease has never been known to have reached Arabia before; it was imported this year from Cairo and Suez. (According to the registers of the government, upwards of forty-five thousand souls have died this year at Cairo.) I landed on the peninsula of Mount Sinai, and arrived from thence by land at Cairo, which town I thus reached again after an absence of upwards of two years and a half.

"Arabia, as far south as Abon Arish on the coast of Yemen, has become at present a Turkish conquest. The Wahabees had for several years been very successful against the invaders, which they had routed in almost every encounter. In the beginning of 1814, Mohammed Aly, the Pacha of Egypt, paid a personal visit to his troops in the Hedjaz, and increased his army there to the amount of about six or seven thousand men; he seized the Shereef Ghalel, governor of Mekka, who was sent by orders of the Porte to Salonie, gained the goodwill of the Bedouin Arabs in the Hedjaz by distributing amongst them considerable presents in

money and clothes, and at last ventured in January, 1815, upon an expedition against the united forces of the Wahabees, who had approached Tayf, and formed an army of forty thousand men, all armed with matchlocks; on the 11th and 12th of January, a decisive battle was fought near the village of Byssel four days' journey south east from Mekka; the prowess of the Turkish cavalry decided the contest, and the Wahabees were completely defeated; they lost upwards of seven thousand men killed, about five hundred prisoners, who were afterward impaled at Mekka and Jidda, all their tents and baggage, and about six thousand camels. The Pacha pursued the fugitives in a southern direction, he took the town Tarabo, headed by a famous female chief, of the name of Ghalye, who had twice defeated the Turkish corps sent against her; and still continuing his way south, possessed himself of the fertile districts of Rayne and Byshe (the latter thirteen days' journey from Mekka), the chiefs of which were all changed by him. From Byshe he turned to the west, and crossing the chain of mountains which runs all through Arabia, parallel with the sea, arrived in the country of the Arabs, called Asyr, whose sheikh, Tamy, was the most powerful chieftain south of Mekka, who had already once defeated the Turkish army, and had joined his party at Byssel with ten thousand men. A hard fought battle of two days put

Mohammed Aly in possession of Tamy's castle, the latter himself fled to the Shereef Hamoud, governor of the Yemen seacost, by whom he was treacherously taken prisoner, and sent in chains to Mohammed Aly, who descended now towards the seacoast at Gonfode, and returned to Mekka seventy-five days after his departure from thence, having thus succeeded in completely subduing the most strenuous adherent of the Wahabees, during an expedition, the success of which does infinite honour to his spirit of enterprise and his martial genius; his troops and himself suffered the greatest hardships from want of provisions, his camels and horses all died on the road, yet such was the influence he had gained over the minds of his soldiers, that they cheerfully followed his orders, which, considering the spirit of independence and constant revolt of the Turkish soldiers, does still more honour to the Pacha's abilities than even his victories. Having thus settled to his satisfaction the affairs of the south, where no Wahabees remain at present, the Pacha proceeded in April, 1815, to Medina, where his eldest son, Touson Pacha, was stationed, in order to direct from thence his operations against the country of Nedjed, and the town of Derayeh, the seat of the Chief of the Wahabees, twelve days' journey distant from Medina; his cavalry took in May possession of the district of Kasyne, and advanced to the distance of six days'

journey from Derayeh, being separated from thence by a desert plain. The want of camels of transport, however, did not permit the Pacha to accomplish his designs; orders were sent to Cairo and Damascus for a new supply of several thousands of them, and Mohammed Aly returned in the mean time to Egypt in June 1815. If Derayeh is taken, the Wahabee power will be entirely destroyed; but that town is of difficult access, easily to be defended, and inhabited by a warlike tribe of Arabs.

"I have had positive news from Mocha, that Dr. Seetzen was not killed in Africa, as reported some years ago in the public prints, but poisoned in September, 1811, by order of the Imam of Yemen, at Taes, a country town two days' journey from Mocha, while he was just starting on a journey through the inland countries of Yemen to Makat and Bassora; his papers and baggage, which latter had principally attracted the cupidity of the government, being loaded upon seventeen camels (a circumstance hardly to be believed, but positively affirmed by the gentlemen of the East India Factory, who saw Dr. S. only two days before his melancholy fate): in fact his whole equipage was sent to Sana."

"CAIRO, 28th June, 1816.

"For once you have the right to abuse me. It is upwards of four months that I have received your letter of the 20th of October, and I should certainly have answered it long ago, had I not been desirous of taking at the same time my leave of you, and closing for awhile my eastern correspondence with you. My ultimate departure from here must, however, still be delayed; and this being the case, I did not wish longer to keep back my answer, were it merely to deprive you of the satisfaction to retort upon me for as much negligence as I had formerly reproached you with.

"Your various communications have been most acceptable. They were for the greater part unknown to me, except the political news, for in that we are seldom more than two months behindhand with France and England. The battle of Waterloo was known at Cairo in the first days of August. What gave me most pleasure to understand is, that you are well and flourishing, and that the success of your publication is equal to your most sanguine hopes, and the just expectations of your friends. I infinitely regret not to have had an opportunity of perusing your work, of which I have seen, however, several reviews. On one subject I am afraid we shall be 'at daggers drawn:' I mean your opinion of Bruce. It is certainly not

by questioning a rude, untaught man about facts which had taken place when he must have been yet a child, that satisfactory inferences can be drawn; and the circumstance of your Abyssinian at Cairo having recognised the correctness of Bruce's drawings, is of little moment, at least to me, who know the little power of discrimination Easterns in general possess, in judging of pictures or sculptures. I would lay a wager at any time to take the first Arab from the streets of Cairo, and shew him the picture of a flea, asking him at the same time whether it was not like his camel, and to receive an affirmative answer without the smallest hesitation. Bruce, it seems to me, has never had yet justice done to him; for he stands now convicted, and that from his own papers, beyond the slightest doubt, to have been guilty not only of exaggerations, oversights, or braggardism, which might be pardoned in consideration of his other merits, but of the most palpable, downright falsehoods, and shameful literary forgeries, spun out to a considerable length, with which he intended to impose upon an admiring world. Yet he finds his advocates still! Yet many allow that he was an honourable man! His character has nothing to do with his literary merits; the first, I speak it from full conviction, appears to have been, after all his boasting to the contrary, as mean as the others were exalted; and it may at once serve

to characterize our age, that so distinguished a man dared with such impudence to delude, and still should find his defenders! I would rather forgive a man to be found perjured in the Old Bailey, than forgive Bruce; and the time may perhaps come, when similar literary crimes are brought to the cognizance of the law as well as civil ones. They certainly originate in as bad principles, and do as much harm as many of the latter.

"The friendly advice you give me about the necessity of being constantly attentive to my journal, deserves my best thanks. No fatigue, or sunrays, or sleepiness, have ever caused me to let my tablets repose in my pocket, when any observation presented itself fit to be noted down. But the inquisitive and suspicious eyes of the Arabs and blacks have often produced that effect; and unfortunately the traveller's eagerness to observe, or at least to write, must often be checked by fears for his safety. In travelling, at least as I am obliged to do, many little artifices must be practised to keep the travelling companions ignorant of one's views, and of the paper and pencil; and how far their prejudices go with respect to the sight of a man writing in the road, those only can have an idea of, who have ever tried similar expeditions, and adopted my mode of travelling, which I firmly believe presents the only chance of success in the long run.

"I have lately read Wishaw's Memoir of Tennant, which you mention to me. The respect and esteem I had for Mr. Tennant, whose acquaintance I made through Mr. Browne, was not owing to any lectures he gave me; and as I should think it an honour to have been instructed by him, I should certainly state it, if it was really the case. The fact is, that whenever I met with him at his own or Mr. Browne's breakfast table, a variety of topics of conversation were introduced; Arabia and Africa much talked of—but mineralogy not farther noticed, than to produce sometimes a few specimens, and to ask me whether I knew what they were. I had then already begun to read a little on mineralogy; nor should I have taken notice of this here, if I did not think that the manner in which I am introduced in this memoir was rather unfavourable to myself. If Mr. Tennant, who is stated to have been distinguished for such ease and preciseness of elocution, and a rare talent for making himself clearly understood, even on the most abstract subjects, was at 'considerable pains' to instruct me, it naturally follows that his disciple must have been considerably thick-headed and slow in conception. In the whole, it would have been much better for me if Tennant really had been my instrctor. My knowledge of mineralogy was very scanty when I left England. I have since forgotten a good deal of it; and the public will be much mistaken in expecting

any deep geological and mineralogical disquisitions on the African mountains from the supposed elève of Tennant.

"The next time I go to the pyramids, I shall take particular care to examine those objects you point out to me. As to the well in the great pyramid, it will be difficult to trace its extent. Two Frenchmen were killed by the foul air in letting themselves down. What you tell me about Gothic arches, in answer to what I mentioned, proves only that a person should never talk about things he does not understand. You would therefore be very wrong to quote my authority as strengthening in any point your opinion. The room I saw in the largest pyramid of Sakkara had a roof of two plane surfaces meeting in a point.

"The sunburnt brick ruins of Upper Egypt, especially at Thebes, in the neighbourhood of the Memnonium, which have never been noticed by travellers, yet appear to me the only remnants of the private habitations of Thebes, have all round arches. There still exists at Cairo a mosque built by Amroo Ibn el Lasr, the conqueror of Egypt in the seventh century. It has pointed arches, and is, perhaps, the strongest argument to be met with in Egypt in favour of the opinion that the Saracens knew that arch before it was introduced in England. Mr. Bankes, who has lately been here, and is now in Syria, has made the history of

architecture his principal object; and as he is fully acquainted with his object, and draws beautifully, and is besides well stocked with learning, he will no doubt be able to set similar questions at rest. He has visited the Nile borders up to the second cataract, and has lately gone in Syria over those ruins in the country to the east of the Jordan (Djerash, Omkais, and the Hauran) which Seetzen had discovered, and I had seen after him, and of which he speaks with raptures in his letters to me. He is certainly a very superior man, who bears his faculties, and rank, and fortune, most meekly; and is both indefatigable and accurate in his researches. Egypt is so remote a corner, that very few travellers take the trouble of visiting it. Since last year two only have been here. Yet the journey to Upper Egypt presents, in winter time, more satisfaction, even to those who travel only for their pleasure, than any other eastern country.

"During the last plague, which has just subsided, I made a journey to the peninsula of Sinai, which, beyond the common route from Suez to the Convent, is still very little known. This group of granite rocks stands isolated from all other granite to the distance of many hundred miles. The secondary chain is sand-stone; and, close to the sea, all around the peninsula, is chalk. About the mountain of Moses, fine rock-crystal is met with. In traversing the desert from Cairo to Suez, I took

this time my route close to the southern mountain, when I found a quantity of petrified wood, whole trunks of date-trees, every fibre of which can be distinguished from the stone. Several travellers have denied its being petrified wood, but that which I saw bears the most convincing proofs of its having been a vegetable substance. The specimens I picked up are much resembling those which are found in the Libyan desert, in that tract of the supposed ancient bed of the Nile, called now Bahhr bela Ma, where a whole forest of still-standing petrified palm-trees exists; which was visited in 1812 by Mr. Bontin, a French traveller, who was murdered last year in Syria. A box which I mean to dispatch to Mr. Renouard, will contain several specimens of rocks for you. If ever I pass by Antiparos, I shall fill my trunk with stalactites of Arragonite, but I see very little probability of my getting into Greece before I am finally returned to England. Had I known last year that I should be so long detained here, I should, perhaps, have paid you a visit, and rather have spent my time at Trumpington than at Cairo. I have given your compliments to the gentlemen of your acquaintance here, whom you still remember. Mr. Rosetti, who is still living, and blackening every day his eye-brows and whiskers, perfectly recollects you; but the influx of Englishmen about your time was such, that Mr. Pini, whatever

efforts he made with his memory, could not do as much. Mrs. Pini, on the contrary, never forgot the reel-dance you once exhibited here.

"I hope you have not given up the idea of shewing Mrs. Clarke the lions of Paris. Every Englishman's trip to France must be to him a triumphal procession; and I would rather send my son to go and look at the field of Waterloo, than let him visit the finest museums and galleries of Europe. The political news of last year could not fail to excite my liveliest interest; it has exercised its influence even as far as Egypt; and the Pacha, who rejoiced to see England and France at war, is now in the greatest terror from the dread of an English invasion. He has been for several years at great pains and expense to fortify Alexandria, and at this moment two thousand peasants are employed in levelling all those hills in the neighbourhood of Pompey's pillar (or, with your permission, Diocletian's pillar) which overlook and command the town. About seven thousand cavalry and five thousand infantry are posted along the coast; and batteries have every where been constructed. I understand that the workmen engaged have dug out many valuable antiquities, which, however, it is very difficult to get for a reasonable price; for every soldier, and every Christian shopkeeper, has, by this time, become a collector of antiquities. Nothing interested me more at

Alexandria, than the commonly called baths of Cleopatra, which extend all along the shore, from the old harbour to the ancient mouth of the canal. They are stupendous works, and alone can give an idea what Alexandria once was. The catacombs appear paltry Grecian imitations of old Egyptian tombs; they are interesting at first landing in Egypt, but lose their interest after the originals have been seen in Upper Egypt. Upon the gate of the large saloon, in the north extension of that catacomb, is the winged globe you mention. In returning from Alexandria I saw the Delta, and several ruins in the province of Sherkei. At Temey, the antiquities of which, especially the fine monolithe cage, Lord Valentia has described, I met with very extensive mounds or hillocks, on the precincts of the town, entirely composed of bones, which appear to have undergone the action of fire. The inhabitants say that they are the bones of Infidels, burnt alive when the Mussulmans took the town."

Mr. Burckhardt, it is well known, died at Cairo, in 1817, at the moment when, after nine years of the most laborious preparations under the auspices of the African Society, he was about to take his journey across the desert of Africa in his way to the banks of the Niger, the main object of all his toils.

Mr. Eustace, a name well known to every Englishman who has passed the Alps, was another traveller as intimately connected with Dr. Clarke as Mr. Burckhardt, and more resembling him in the qualities of his mind, particularly his imagination and taste, as well as in the harmony and richness of his language. It is to this intimacy the public is indebted for his very popular and charming work upon Italy. He had returned from the continent several years before he thought of publishing, for though always a studious and laborious man, he was at that time diffident of himself, unacquainted with the public taste, and averse from making an experiment upon it in his own person; but from the moment Dr. Clarke saw his journal, he did not hesitate to pronounce upon its success; nor would he suffer Mr. Eustace to rest till he had prevailed over his objections, and obtained his consent to its publication, taking upon himself all the preliminary steps, and concluding a liberal treaty for him with his bookseller (Mr. Mawman), from which all the parties have since derived the greatest satisfaction.

"Eustace, alas!" says he, in a letter to the author of this Memoir, "is with the years beyond the flood: he died at Naples about a month ago; I feel the happier in reflecting, that the monument he has left behind him, would, but for my exertions, have been buried with him."

The honest triumph conveyed in this passage, seems to have escaped him in a moment of regret, for though many were the literary kindnesses and services he was enabled to bestow upon others, this was the only one in the recollection of his biographer of which he ever spoke.

CHAP. X.

Third Volume of Dr. Clarke's Travels—Lord Byron—Bishop Mansel—Dr. Clarke's Blow Pipe—Discoveries respecting Cadmium—Election to the office of Sub-Librarian—Inscription for Sir John Moore—Dissertation on the Lituus—Illness—Death—Character.

SHORTLY after the return of Dr. Clarke to his residence in the town of Cambridge, the third volume of his Travels made its appearance from the press, which, as it was more anxiously expected and better received by the public than either of the former, so was it also the most approved by himself. The subjects evidently pleased him, and he seems also to have been pleased with his own management of them, particularly with the History of the Pyramids, of which he expressed his conviction, that it would live, when "he himself should be gathered to his fathers." With the second it was quite otherwise, for he was never satisfied respecting it, either before or after its publication, and when some strong praise of this volume was reported to him by his bookseller in town, he only expressed a wish, that he could find an echo to it in his own breast; more favourable, however, was the opinion formed of it by his

friends, especially Lord Byron, whose remarks, coming as they do from a competent witness of no ordinary stamp, and marked as they are with a tone of feeling, which is honourable both to the subject of this Memoir and himself, will not be unacceptable to the reader.

From Lord Byron to Dr. Clarke.

"St. James's Street, June 26, 1812.

"Will you accept my very sincere congratulations on your second volume, wherein I have retraced some of my old paths, adorned by you so beautifully, that they afford me double delight. The part which pleases me best, after all, is the preface, because it tells me you have not yet closed labours, to yourself not unprofitable, nor without gratification, for what is so pleasing as to give pleasure? I have sent my copy to Sir Sidney Smith, who will derive much gratification from your anecdotes of Djezzar, his 'energetic old man.' I doat upon the Druses; but who the deuce are they with their Pantheism? I shall never be easy till I ask *them* the question. How much you have traversed! I must resume my seven leagued boots and journey to Palestine, which your description mortifies me not to have seen more than ever. I still sigh for the Ægean. Shall not you al-

ways love its bluest of all waves, and brightest of all skies? You have awakened all the gypsy in me. I long to be restless again, and wandering; see what mischief you do, you won't allow gentlemen to settle quietly at home. I will not wish you success and fame, for you have both, but all the happiness which even these cannot always give."

"Dec. 15, 1813.

"Your very kind letter is the more agreeable, because, setting aside talents, judgment, and the '*laudari a laudato*,' &c. you have been on the spot; you have seen and described more of the East than any of your predecessors—I need not say how ably and successfully; and (excuse the bathos) you are one of the very few who can pronounce how far my costume (to use an affected but expressive word) is correct. As to poesy, that is as, 'men, gods, and columns,' please to decide upon it; but I am sure that I am anxious to have an observer's, particularly a famous observer's, testimony on the fidelity of my manners and dresses; and, as far as memory and an oriental twist in my imagination have permitted, it has been my endeavour to present to the Franks, a sketch of that of which you have and will present them a complete picture. It was with this notion, that I felt compelled to make my hero and heroine relatives, as you well

know that none else could there obtain that degree of intercourse leading to genuine affection; I had nearly made them rather too much akin to each other; and though the wild passions of the East, and some great examples in Alfieri, Ford, and Schiller (to stop short of antiquity), might have pleaded in favour of a copyist, yet the times of the north (not Frederic, but our climate) induced me to alter their consanguinity and confine them to cousinship. I also wished to try my hand on a female character in Zuleika, and have endeavoured, as far as the grossness of our masculine ideas will allow, to preserve her purity without impairing the ardour of her attachment. As to criticism, I have been reviewed about a hundred and fifty times—praised and abused. I will not say that I am become indifferent to either eulogy or condemnation, but for some years at least I have felt grateful for the former, and have never attempted to answer the latter. For success equal to the first efforts, I had and have no hope; the novelty was over, and the 'Bride,' like all other brides, must suffer or rejoice for and with her husband. By the bye, I have used bride Turkishly, as affianced, not married; and so far it is an English bull, which, I trust, will be at least a comfort to all Hibernians not bigotted to monopoly. You are good enough to mention your quotations in your third volume. I shall not only be indebted to it for a renewal of the high gratification received from the two first, but for preserving my re-

lics embalmed in your own spices, and ensuring me readers to whom I could not otherwise have aspired. I called on you, as bounden by duty and inclination, when last in your neighbourhood; but I shall always take my chance; you surely would not have me inflict upon you a formal annunciation; I am proud of your friendship, but not so fond of myself as to break in upon your better avocations. I trust that Mrs. Clarke is well; I have never had the honour of presentation, but I have heard so much of her in many quarters, that any notice she is pleased to take of my productions is not less gratifying than my thanks are sincere, both to her and you; by all accounts, I may safely congratulate you on the possession of 'a bride' whose mental and personal accomplishments are more than poetical.

"P.S. Murray has sent, or will send, a double copy of the Bride and Giaour; in the last one, some lengthy additions; pray accept them, according to old custom, 'from the author' to one of his better brethren. Your Persian, or any memorial, will be a most agreeable, and it is my fault if not an useful, present."

"I trust your third will be out before I sail next month; can I say or do any thing for you in the Levant? I am now in all the agonies of equipment, and full of schemes, some impracticable, and most of

them improbable; but I mean to fly 'freely to the green earth's end,' though not quite so fast as Milton's sprite."

The following letter upon the same subject is from Mr. Payne Knight, whose learned labours upon Homer must give a value to his approbation of a volume deriving so much of its materials from scenes connected with the Homeric story. For the same reason, even the slight geographical discussion contained in it will be interesting to the classical reader.

"Soho Square, June 21.

"My dear Sir,—I sent the cast on Friday, packed up in the same case which brought me the beautiful original, and hope you have received it safe. Being upon the point of leaving town, I have bestowed most of the two last days upon your second volume, following you with equal interest and profit over the interesting scenes which you so well describe, particularly those of the Troade, upon which you have thrown much new light. I still, however, think that the hills of Bournabashy were the sites of Ilios and its citadel Pergamos; and the plain behind (of Reyoom, I think you call it) the πεδιον ιληιον, over which Agenor meditates his escape from Achilles to the Forests of Ida. Hector is on the other side of the Scamandar from the city when he fights on the

left of the battle, on the banks of that river, and Priam crosses it when he goes to the Tents of Achilles. In short, every thing seems to suit that situation and no other; nor is its distance at all too great for the marchings and counter-marchings described according to the then mode of warfare. Upon the tumuli I lay no stress, though I admit that they bore the names which they now bear long before the Macedonian conquest. How much it is to be regretted that we have no very accurately detailed map of that interesting country. Every mound, spring, and rivulet should be traced.

"Ever faithfully and gratefully yours,

"R. P. KNIGHT."

But of all the compliments paid to him on the subject of his Travels, the lines which follow, from the late Bishop of Bristol, gave him the greatest pleasure, not so much on account of the quality or degree of praise conveyed by them, as for the sake of the person associated with him in the honour of it. Dr. Clarke's answer to the lines is subjoined:—

To Professor Edward Daniel Clarke, on his Book of Travels.

FOR hours with thee, in pleasure past;
For sense, for nature and for taste,
Delightful Traveller, receive
All that a grateful mind can give;

A mind that lov'd with thee to roam,
And found, in every clime a home;
In every clime, a welcome found,
On Holy, or on Classic ground:
For such the meed must ever be,
Of worth like thine, and courtesy.

But, oh! with all thy matchless skill,
To bend attention to thy will;
With all that the Historic muse
Can, o'er thy brilliant page, diffuse;
Oh, say, what could thy powerful art,
E'en *thine*, t' engage and keep the heart,
Did'st thou not bribe the enraptured eye,
With all the charms of symmetry;
The sculptured grace, the magic form,
With life, with taste, with beauty warm;
Did *she* not bid, with skill divine,
Her pencil glow along the line;
Herself a thousand powers in one,
Thine own ANGELICA alone? W. B.

The Answer.

When taste and genius both combine
To yield the meed of praise,
Their theme, embalmed by every line,
Exists in deathless lays:

Thus, haply, in thy magic rhyme,
The Pilgrim and his Tale,
Buoyant along the stream of time
May still attendant sail;

But she, whose "myriad powers in one"
Inspir'd thy gifted song,
ANGELICA*—to her alone
Shall all the praise belong! E. D. C.

The next year the University of Cambridge was visited with a typhus fever, which proved fatal to some of the younger members, and created great alarm amongst all who were either resident in, or connected with it. Dr. Clarke had just begun his

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* Connected with the main object of these verses, is the following jeu d'esprit of Professor Porson, every scrap of whose learning is acceptable. It is a Latin Charade upon the word cornix, addressed to Angelica (Mrs. Clarke), under the name of Iris. Iris, said he, is called Ἄγγελος in Homer. It is beautifully written upon a small heart-shaped piece of fine vellum, about the size of a shilling, by the Professor himself.

From
a MS.
700
Years old.

Aenigma ex eo *genere quod ex duabus monosyllabis vocibus unam vocem dyssyllabon efficit. Primum, secundum, tertium, sive totum. Gallice, *Charade.

Te primum incaute nimium, propiusque tuenti,
Iri, mihi furtim surripuisse queror;
Nec tamen hoc furtum tibi condonare recusem,
Si pretium simili solvere merce velis.
Sed quo plus candoris habent tibi colla secundo,
Hoc tibi plus primum frigoris intus habet;
Jamque sinistra cavâ cantavit ab Ilice totum
Omina, et audaces spes vetat esse ratas.

R. P.

annual labours to a crowded audience, with an introductory Lecture upon the origin and formation of meteoric stones, at which were exhibited the most celebrated aerolites in the kingdom, and was advancing with great spirit and popularity in his course, when this calamity forced him to his bed, and dispersed his audience.

"We have been all dying," he says in a letter to Mr. Cripps, "Angel had the fever first, but did not give it to the child (his fourth son) at her breast, proof therefore that it cannot be catching. I then was seized with it, in the midst of my Lectures, and had one hot fit which lasted thirty-six hours. You that have seen what my sufferings used to be with a hot fit of eight hours, may guess what sort of a struggle I should have with one of thirty-six hours. I am now slowly recovering, but many are dead." What notions he himself had formed of this fever, it is difficult to say, nor is it perhaps now material: but having suffered from it himself, and witnessed its effects on many others, he had been led to some conclusions respecting it, which he submitted to the public in the Courier newspaper, under the signature of Senex.

In the course of the same year, he took great interest in the fate of a collection of vases, which had been brought from Athens by Mr. S. Graham, and were to be sold by auction in London, in the spring. This gentleman had resided for several months at Athens, and his excavations, which had been carried

on with great perseverance and spirit under the direction of Mr. Fauvel, a French artist, to whom Dr. Clarke had recommended him, had been more successful than those of any other persons who have either preceded or followed him. The number of vases found by him was very considerable; and though it seems to be allowed, that the specimens from Greece do not usually exhibit such fine workmanship as those of Magna Græcia in the south of Italy, yet were there among the fruits of his researches some which in point of elegance of form, as well as classical illustration, were entitled to a high degree of distinction; independent of the superior interest derived from the place where they were found, which was without the city of Athens, a short distance on the road to Thebes. Of these vases Dr. Clarke drew up a learned and interesting description, which formed in fact the catalogue at the sale. A few of the lots were purchased by himself, and remained in his possession at his death, with a small collection of his own brought from Epidauria, and some bought in by Mr. Graham, were afterward given to the author of this Memoir; amongst which was one small specimen of great beauty, and highly estimated by Dr. Clarke, on account of a theory which it was supposed to illustrate; it represented one of the Libethrides, bearing what is called the Ionic volute in her hand, and he had formed a conjecture, that all the antique borders, friezes, and cor-

nices, were derived from a superstition connected with this symbol, which he imagined to be a plant; at his request the vase was placed in his hands for the purpose of being engraved, and his letter affords a curious proof of the rapid and ingenious combination of his ideas upon such subjects, and of the readiness with which he was accustomed to turn his accidental observations to account.

To the Rev. William Otter.

"HARLTON, Sept. 17th, 1815.

"I now return to you your most valuable vase, with many thanks; Angelica has made a beautiful drawing from it; which will be the tail-piece of the preface to my fourth volume; wherein the subject is discussed to which the curious symbol relates: I never was so interested in any subject in my life, as I have been by these terra-cottas. I believe I have at last made out their whole history. The discovery of a vase at Athens with this most Archaic inscription—'I am a prize given by Athens,' or, 'I am the prize of the Athenæa,' for Blomfield, who is for the first, and Knight, who is for the second, are two, as to the reading; the discovery, I say, of this inscription has recorded the use of these vases in such conspicuous characters, that it may be said to be 'written in sun-beams.'

"When, therefore, this precious little libatory arrives, please to take off your hat before it, and make your best bow; for no unhallowed hand may touch it. Above two thousand years have sped since it was won by an Athenian whom the songs proclaim 'a victor,' in the Panathenæa. Get a Shrewsbury cabinet-maker to secure it in a glass cabinet in the best corner of your mansion, lock it up, and throw the key into the Severn. If it should ever be broken, expect the utmost of Minerva's resentment.

"I have worked like a dragon to get to the end of my fourth volume, 'wasting the midnight oil' in continual quill-driving and cogitabundity."

In the early part of the next year the fourth volume of his Travels came out, and the Fitzwilliam bequest having arrived at Cambridge, he was appointed one of the syndicate for the arrangement and disposal of that most interesting and valuable property.

To shew his extraordinary devotion to his Lectures in Mineralogy, it may be mentioned, that he began this year to study oil painting, for no other purpose than to embellish his Lecture-room with fresh ornaments and attractions, and by a series of designs to give a faithful and accurate representation of the native character and situation of his most remarkable minerals, and of the scenes amidst which

they occur. But a more striking proof of his attachment remains to be told; for at the same time he undertook to carry on all the chemical experiments necessary for a knowledge of his subjects, during the Lecture itself, that he might have the analysis of them fresh in his own knowledge and recollection, and as much as possible brought before the eyes of his pupils. This task he never afterward relinquished, and it will appear subsequently how severe and laborious it proved to be.

The year 1817, which was important to him in several respects, opened with a most flattering testimony of the esteem in which he was held in the University, by his election to the office of Librarian, vacant by the death of Mr. Davies. The situation, though not lucrative, was particularly agreeable to Dr. Clarke, on account of its connexion with the Library; but the most grateful circumstance arising from it, was the manner in which his application was received by the numerous circle of his friends. From the moment his pretensions were known, the warmest promises of support flowed in upon him from all quarters, of which a large mass of testimony remains; and so decidedly was the sense of the University shewn in the course of a short canvas, that the other candidates withdrew before the day of election; thus the field being left open to him, he was unanimously elected, on the 13th of February, 1817; and the heartiness of his joy

upon the occasion, it would be vain to express in any other words than his own.

" Feb. 14, 1817.

" Yesterday was one of the happiest days of our lives. I might truly say—

> 'I envy not
> The king his lot,
> When ding dong went the bells.'

" In the morning at twelve our baby was christened. At two P.M. I was unanimously elected Librarian in the senate. In the evening, we had all our friends to a dance and supper, which went off in most gallant style till four. This morning, as soon as I was elected, the bells of St. Mary's, and of St. Benedict's, fired off most jovial peals, and all was mirth and gratulation.

" I hope you will hear me open my course of Lectures in high force. See the next number of Thomson's Annals, for a farther account of my experiments."

The subject alluded to in this letter, as forming the substance of a paper in Dr. Thomson's Annals, and intended to be brought forward in his next Lecture, was the Gas Blow Pipe; a subject which, considering the large share of his labours it occupied during the few remaining years of his life, which it in truth contributed to diminish, requires, perhaps,

in justice to his memory, to be somewhat fully detailed. The history of this machine commences at an earlier period, but it has been purposely reserved for this year, when the interest arising from it, both in his own mind and in those of others, was at its height. So early as the year 1814, Dr. Clarke had been in the habit of submitting many of his minerals to the action of the common blow pipe, a practice from which he proposed to himself amusement as much as information, and which he recommended to his friends as an admirable way of passing an idle evening. In the course, however, of this scientific sport, which began to wear more importance in his eyes as he advanced, his eagerness for inquiry soon outstripped the powers of the humble instrument employed by him; and being destitute of other chemical apparatus, his attention was anxiously directed towards every hint or observation which was likely to improve and to make the most of that which he had; especially in 1816, when having made a discovery of a new colouring principle in soda, about which he corresponded with Dr. Wollaston, he found still greater encouragement for the continuance of his pursuit. In this state of mind a little work of Lavoisier's fell into his hands, entitled, 'Essai d'un art de fusion à l'aide de l'air du feu, par M. Ehrman, suivi des Memoires de M. Lavoisier, Strasburg, 1787,' in which is described the use of hydrogen and oxygen gases propelled from different reservoirs in the fusion of

mineral substances, and in aid of the common blow pipe. Here was one step gained, and while his thoughts were occupied with this work, he saw accidentally at Mr. Newman's, in Lisle Street, a vessel invented by Mr. Broke for a different purpose, but which he thought capable, with some alteration, of bringing these new agents into use in the way he wished: accordingly, he set Mr. Newman to work upon it with his ideas, who after several trials, produced the celebrated instrument called the Gas Blow Pipe; in which the two gases being united in a common reservoir, in the proportion in which they constitute water, are propelled through a jet of very small diameter, and by their combustion at the orifice, as in the coal gas lamp, produce an intensity of heat, infinitely superior to that of the common blow pipe. The exact proportion of hydrogen to oxygen (viz. two to one in bulk), to which he always attached great importance in the conduct of his experiments, and which he thought could be equably supported, only by having a common reservoir, was a suggestion entirely his own, and derived from a theory long ago adopted by him at Naples, that the volcanic explosions of Vesuvius, with the intense heat which accompanied them, were mainly caused by the pressure and subsequent combustion of these two gases, formed from the decomposition of water, which was always observed to be withdrawn from the neighbouring wells, and even lakes, in great abundance, on the eve of

an eruption. In this stage of his progress he communicated his views to Sir H. Davy, and Dr. Wollaston, in May, 1816. The latter was averse from the experiment altogether, under the well-founded apprehension, that the retrograde motion of the flame would cause the apparatus to explode; and while he suggested several minerals, particularly iridium and wood tin, as proper subjects of experiment, earnestly recommended a different process in the management of the explosive gases, and warned him against that which he had described. The former (Sir Humphry Davy) reported to him in July of the same year, that he had made the experiment. In the mean time, Dr. Clarke proceeded for several weeks in his own way, to submit some of the most refractory substances of the mineral kingdom to the action of the new machine, and with no other inconvenience than a few harmless detonations; but at last the accident predicted by Dr. Wollaston occurred; and Dr. Clarke himself, with two other gentlemen and a servant, were exposed to the most imminent danger, by the bursting of the copper reservoir, under a high state of pressure, large pieces of which passed close to some of them, and buried themselves in the walls. In September he wrote thus to the author of this Memoir:

"I sacrificed the whole month of August to chemistry. Oh, how I did work! It was delightful

play to me; and I stuck to it day and night. At last, having blown off both my eyebrows, and eyelashes, and nearly blown out both my eyes, I ended with a bang that shook all the houses round my Lecture-room. The Cambridge paper has told you the result of all this alchemy, for I have actually decomposed the earths, and obtained them in a metallic form."

Rendered cautious by this accident, but in no way dismayed by it, his only care was to prevent a repetition of the danger; and being supplied with a simple but ingenious invention of Mr. Cumming (Chemical Professor at Cambridge), called the safety cylinder, which by the intervention of a column of oil, intercepts the retrograde motion of the flame, without interfering with the passage of the gas, and farther secured by a screen of wood interposed between the main body of the apparatus and the operator, he continued his experiments with more spirit and greater success than ever, submitting the results of them from time to time to the public, in the Journal of the Royal Institution, and in Dr. Thomson's Annals. These results, which with many others were afterward collected and published by himself, will be passed over with no other observation than that his experiments upon brass (copper with zinc) are considered by Mr. P. Knight of great importance, inasmuch as they present to the antiquary an easy test for distinguishing ancient bronze from a spurious

imitation in brass; but the effect of his labours upon Barytes (the heavy earth), necessarily falls within the scope of his biographer, because from this arose a memorable difference of opinion betwixt Dr. Clarke with his friends on one side, and the chemists of the Royal Institution on the other. It is well known that the metallic nature of the earths is a discovery entirely due to the illustrious president of the Royal Society; and that amongst other names conferred at first by anticipation, he gave the name of Barium to the metallic base of Barytes. This earth, on account of its refractory nature, became very early an important subject of Dr. Clarke's experiments, the effect of which was a firm conviction in his own mind, that he had procured the metal Barium, or Plutonium, as he afterward called it, by fusion with his gas blow pipe. All the merit that he could possibly claim was, that he had arrived at the same result with Sir H. Davy, by a more simple process, and had exhibited the metal without any amalgam, with greater lustre, and in a more permanent form. But this, it must be confessed, many distinguished chemists, and particularly those of the Royal Institution, were not disposed to allow; for having carried on similar contemporary experiments upon the same substance, without deriving the same satisfaction from the results, they concluded that Dr. Clarke and his friends had been deceived by the pseudo-metallic appearance, which is allowed on all hands sometimes to accom-

pany the action of the blow pipe, particularly in wood tin; and that, in point of fact, he had not procured the metal Barium at all. On the other hand, Dr. Clarke, confiding in the results of his own labour, contended that the experiments of the Royal Institution had failed, either from the impurity of the earth (for he himself had found, that he could never succeed unless the substance was entirely free from water), or from their not using the safety apparatus, and therefore not obtaining sufficient power; and appealed not only to his own pupils and friends, but also to many strangers and visitors, as well as to some well known chemists, all of whom had witnessed his experiments. In the mean time, several curious and interesting discussions took place between Dr. Clarke and his philosophical friends respecting the metallic lustre of his results, while specimens of the metal procured by him were exhibited at Sir Joseph Banks's, by Dr. Thomson, and others; and in the month of April, 1817, Dr. Wollaston himself, who was always upon the most friendly terms with Dr. Clarke, came down to Cambridge, by appointment, upon a visit to him, on purpose to be present at the operation; shrewdly observing, that one pair of experienced eyes was as good as two hundred (the number of the audience), some of whom, not being able to see, were no evidence at all. What his opinion was immediately after this meeting, does not appear, but it is probable from their farther correspondence, that his

doubts, which rested upon the substance fused not answering certain nice metallic tests, were not removed. At all events, the same scepticism, or rather infidelity, remained at the head quarters of the Royal Institution, and at last, to bring the matter to issue, Dr. Clarke fairly proposed to come to London himself, with his apparatus, and to exhibit the experiment in the presence of its most distinguished members, and in their own laboratory. For some reason, the meeting never took place, and as no attempt was afterward made to bring the parties together, and no other experiments have been carried on with the same spirit since Dr. Clarke's death, the subject remains, it is believed, nearly as it was. But whatever becomes of this question,* it is surely fair to infer,

* The following account of Dr. Clarke's discovery of the metal of Barytes is given by Dr. Thomson. See his Chemistry, v. i. p. 342, edit. 1817. "Dr. Clarke has decomposed Barytes, by exposing it to an intense heat, produced by the combustion of a stream of oxygen and hydrogen gas, mixed together in the requisite proportion to form water. He has given to the metal of Barytes the name of Plutonium." He then proceeds to relate its properties, and describes it as a "solid metal of the colour of silver; melting at a temperature below redness, and not being volatilized by a heat capable of melting plate-glass, but at that temperature acting violently upon the glass: probably decomposing the alkali of the glass, and converting it into a protoxyde. When exposed to the air, it rapidly tarnishes, absorbs oxygen, and is converted into Barytes. It sinks rapidly in water, and seems to be at least four or five times heavier than that liquid.

that some merit is due to Dr. Clarke for his rapid and ingenious combination of means in the invention of the Gas Blow Pipe; and a much higher degree of praise for his extraordinary zeal, industry, and perseverance, manifested in the use of it, by which he has produced results infinitely more curious and brilliant than those which any other chemist had effected by the same agents; all the earthy minerals having been fused by him as well as all the metals, many of which could scarcely be affected by the best furnaces. Berzelius, in Sweden, Mr. Hare, in America, and, it is believed, Dr. Thomson, had all tried the effects of these gases by a different method, but not with the same results. Not to lose sight of this subject, it may be stated, that whatever feeling of disappointment might have arisen in his mind from the doubts or incredulity of others, it never seems to have put him out of humour with his invention, or to have interrupted the career of his exertions, for during the remainder of this year, and throughout the whole of the next, his experiments were continued with such ardour and perseverance, that no less than twenty papers, entirely resulting from them, were communicated to the public in Dr.

It decomposes water with great rapidity; hydrogen is emitted; and it is converted into Barytes. When strongly pressed, it becomes flat, and hence appears to be both ductile and malleable."

Thomson's Annals, a list of which will be given in the Appendix; and in 1819, he collected his observations in a small octavo volume, entitled the Gas Blow Pipe, with engravings of the instrument, the safety apparatus, &c. It contains at some length the history of the discovery, with the particulars and properties of the machine; also an interesting and lively description of some remarkable phenomena witnessed by himself attending an eruption of Vesuvius, which led to his theory of the gases, and an appendix describing his experiments upon ninety-six substances of the mineral kingdom, with their results. His last remarks, directly relating to this machine, are contained in a paper in Dr. Thomson's Annals, 1821 (new series), entitled, " Observations upon the Gas Blow Pipe, and upon some of the more remarkable results which have been obtained in using this instrument during a course of five years, in which it has been constantly employed; being a continuation of former remarks on the same subject."

Not long after the appearance of this volume, a new substance was submitted to his inquiry, which gave fresh spirit to his operations, and produced results not less interesting than they are unquestionable; of which the following statement will suffice:—

The discovery of a new metal in one of the ores of Zinc, by Professor Stromeyer, about the latter end of the year 1817, was known to the English chemists; but the rarity of the mineral from which it had

been obtained, had prevented the greater part of the scientific world, from all farther examination of its properties. In the autumn of 1819, however, Dr. Thomson had published, in the Annals of Philosophy, a paper by Stromeyer, on this subject, under the guidance of which, Dr. Clarke procured some of the fibrous blende from Prizlram, in Bohemia, and separated from it the new metal, called Cadmium by Stromeyer, to mark its connexion with Zinc, the ore of which had in early times been called Cadmia Terra. Having now the means of becoming acquainted with the properties of this new substance, and the foreign ore having been exhausted, Dr. Clarke undertook the examination of some of the English ores of Zinc, in which the radiated fibrous structure led him to suppose that Cadmium might also be present. In this expectation he was not disappointed, and thus was enabled to add to our catalogue of the productions of this country, the new metal of Professor Stromeyer. This discovery was first announced by Dr. Thomson, in the Annals for March, 1820 and the details of Dr. Clarke's experiments appeared in the same publication for the subsequent month. After this period, other subjects of scientific research occupied his attention for a considerable time, but in the latter end of 1821, he returned to this inquiry. His observations upon the ores which contain Cadmium, and upon the various tests of its presence, are dated 1822, and are published in the Annals for Fe-

bruary. A subsequent paper appeared in March, bearing the date of February 6, containing the details of an experiment by which he had separated the new metal from metallic or sheet-zinc.

It is by no means the wish of his biographer to exaggerate the merit of discoveries, which, had they been ten times more important than they are, would be no compensation to his friends for the costly sacrifice by which they were purchased, the injury of his most valuable health; but surely every candid person must allow, that in this distinguished age of chemical inquiry, when so many skilful and sagacious men are exclusively occupied in extending the boundaries of the science, it is an extraordinary trait in the character of Dr. Clarke, that, occupied as he was in other matters, he was able to make any discovery at all, especially when it is remembered, that his chemical experiments were entirely subsidiary to his Mineralogical Lectures, that they were taken up late in life, pursued under the pressure of the most dreadful health, and with scarcely any other apparatus than the instrument of his own inventing and providing, the Gas Blow Pipe. In truth, the qualities he possessed were not less calculated to ensure success in the paths of science, than in those spacious fields of enterprise which his travels had presented to him. Bold, speculative, laborious, persevering, and ingenious, there was nothing which appeared difficult to him; and so passionately was he devoted to che-

mistry, that, to use his own words, he has actually gone to bed and dreamed of results, which he has afterward waked to obtain. Nor was his want of caution an evil of great importance to him, for such was the candour and communicativeness of his mind, and such the general publicity of his proceedings, that his errors were neither bigotted nor permanent; and many persons there were, very capable of setting him right in various steps of his progress, who were not able to keep pace with him in his subsequent career.

Notwithstanding the deep and lasting interest excited in his mind by these inquiries, which formed from this time quite a new feature in his life, he was never more actively engaged, in his other avocations and duties, never more alive to the general interests of literature, than during the three years in which they were carrying on.* In 1817 he contributed

* The following cursory observations upon female education, written at this time in answer to some inquiries from a mother, afford an amusing specimen of his reasoning upon this important subject. Of course, many cases must occur in which extension of this very limited range of female inquiry must be desirable:—

"In answer to your inquiry, respecting the education of your eldest daughter, my observations will be brief. Let her be educated as you and your sisters were educated, and she will, if she resemble them, possess every accomplishment, and all the information which is requisite to secure the affections of her future husband. Believe me, there is no greater mistake than that of supposing young women are rendered amiable by being what is

two papers to the Archæologia, and one to the Geological Society:—

The first entitled, "Observations upon some Celtic Remains, lately discovered, by the public road lead-

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called 'learned.' If I had a daughter (which is beyond my means of attainment) I would as soon make a dragon of her, as a 'learned woman.' I have seen many of these 'learned women'—horse godmothers every one of them!—but I never knew any thing lovely or desirable in them. Pope has hit them off—

'Artemisia talks by fits
Of fathers, sages, critics, wits,
Reads Malbranche, Boyle, and Locke;
Yet in some things, methinks she fails,
'Twere well if she would pare her nails,
And wear a cleaner smock:'

"As for mathematics, the very idea of such a study for Laura, is enough to make one's blood run cold. Reading, writing, needle-work, arithmetic, accurate spelling, &c. with a little common geography (which comes by reading), and music and dancing; these things are almost necessary in a woman. We expect to find them in every woman of genteel birth, and they are generally found. I would not go beyond these. But as to the kind of reading, there may be much difference of opinion. For my own part, if my taste may guide you, I would make the sacred Scriptures, as often as possible, her exercise in reading, for this reason, independent of more important motives, that in them are contained all the sources of wisdom, history, geography, poetry, morality, pathos, sublimity, unaffected simplicity, truth; in short, open the volume where you will, a divine oracle seems to say, 'Hear! for I will speak of excellent things, and the opening of my mouth shall be of right things.'"

ing from London to Cambridge, near to the village of Sawston: distant seven miles from the University."

The second, "An Account of some Antiquities found at Fulbourn in Cambridgeshire, in a letter addressed to Nicholas Carlisle, Esq. F.R.S. Secretary."

The third, "On the Composition of a dark bituminous Limestone, from the parish of Whiteford in Flintshire."

In the course of the next year a literary task of considerable delicacy and responsibility was intrusted to him, in the most pleasing manner, of which he acquitted himself with great judgment and ability.

The citizens of Glasgow having subscribed a large sum for the purpose of erecting a statue in honour of their illustrious countryman, Sir John Moore, selected Dr. Clarke (to use the words of the chairman of their committee) as the individual possessing the greatest knowledge and taste upon such subjects, and in every respect the best qualified to compose an inscription worthy of the memory of Sir John Moore. In consequence of this flattering invitation, he composed and transmitted to Glasgow several inscriptions, in different languages, from which, in December of the same year, a short one, partly Greek and partly English, was selected by the committee, and afterwards approved by the subscribers and the relations of Sir John Moore. The Greek words are from Thucydides, with a slight alteration:—

ΙΩΑΝΝΟΥ · ΜΟΟΡΕ
ΑΓΑΛΜΑ
ΑΝΔΡΩΝ · ΓΑΡ · ΕΠΙΦΑΝΩΝ
ΠΑΣΑ · ΓΗ
ΤΑΦΟΣ.

The committee wished to have an English inscription, but after some discussion with Dr. Clarke, who thought that it would involve too many details of honours, birth, parentage, &c. they were induced to alter their views. The statue was executed by Flaxman, of bronze, and colossal, to be placed upon a pedestal of granite. The thanks of the subscribers were afterward conveyed to Dr. Clarke, with the information that fifty guineas were placed at his disposal for a piece of plate.

In 1819,* he brought out the fifth volume of his

* The following note, found lately amongst Dr. Clarke's papers, being connected with the transactions of this year, has been thought worthy of insertion. There is nothing new in the dictum of Lord Erskine in this conversation, but his illustration of it will be interesting to many who were acquainted with Mr. Burke or remember his oratory, and the story with which the account closes, will be probably considered as curious by all.

"Monday, July 5, 1819.—While we were waiting at Trinity Lodge, for the deputation from the senate to conduct the Chancellor, I had a conversation with Lord Erskine upon the qualifications of Burke as an orator. Lord Erskine said, that his defect was *episode*. 'A public speaker,' said he, 'should never be *episodical*—it is a very great mistake. I hold it to be a rule respecting public speaking, which ought never to be violated, that the speaker should not introduce into his oratory insular brilliant

Travels; and soon after, in 1820, he published, in a letter to Mr. Archdeacon Wrangham, a Critique on

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passages—they always tend to call off the minds of his hearers, and to make them wander from what ought to be the main business of his speech. If he wish to introduce brilliant passages, *they should run along the line of his subject matter*, and never quit it. Burke's *Episodes* were highly beautiful. I know nothing *more* beautiful, but they were his defects in speaking.' Then he introduced one of his most beautiful *Episodes* taken from a speech on the American war; and repeated, by heart, the whole of that part of the speech in which he introduces the quotation, '*Acta Parentum*,' &c.—'all this,' said he, 'is very beautiful, but it ought to be avoided.'—Now I will give you another specimen from his speeches on the same war, in which his oratory is *perfect*—where the most common, familiar, and even low technical expressions are made to blend themselves with the finest passages; and where, having full possession of the minds of his hearers, he never lets them go from him for an instant.' Then he repeated all that speech.

"Lord Erskine also told me that Burke's manner was sometimes bad—'*it was like that of an Irish Chairman.*'—'Once,' said he, 'I was so tired of hearing him, in a debate upon the India Bill, that, not liking he should see me leave the House of Commons while he was speaking, I crept along under the benches, and got out, and went to the Isle of Wight. Afterwards that very speech of his was published—and I found it to be so extremely beautiful, *that I actually wore it into pieces by reading it.*'

"I have heard Burke often myself; but I have thought it right to preserve these interesting remarks of Erskine in his own words."

"E. D. CLARKE."

the character and writings of Sir G. Wheler, Knight, as a traveller. Only fifty copies of this tract, which is in truth but little known, were at first given to the public, but it was afterward reprinted in Mr. Wrangham's Life of Dr. Zouch. Soon after this he drew up a Prospectus for his Scotch Tour, and made many preparations with a view to the publication of it; collecting his Scotch minerals and drawings, which had been of course much dispersed during the long period that had elapsed since his return.

But of all the literary labours which occupied his pen in the course of this year, the most captivating to his own fancy was his Treatise on the Lituus, an interesting and highly ornamented work, originating in one of those accidents which never happened to any one but Dr. Clarke, and furnishing a striking example of the irresistible energy with which his objects were pursued. In the month of August, a watchmaker at Cambridge, accustomed to collect coins, &c. in the way of traffic, for a young friend of Dr. Clarke, shewed him the impression of a gem that had lately passed through his hands, on which were represented some ancient symbols with the letters A V. After comparing this impression, which struck him as being extraordinary, with some coins and engravings in his own possession, the gentleman consulted Dr. Clarke, who, having taken a little time to consider, came to him at St. John's, and inquired with great eagerness where the gem was. The

watchmaker having been mentioned, was immediately had recourse to, and from him they discovered, that it had been sold to a magistrate residing about ten miles from Cambridge, who happened accidentally to be an acquaintance of Dr. Clarke's friend; a chaise was immediately procured, and away they went together to the house of Mr. Gardener, the magistrate in question, who being overcome by Dr. Clarke's entreaties gave up his bargain, which was carried off in great triumph to Cambridge. From the moment this gem was in his possession, little else was thought or talked of, for some time; all his letters were sealed with the signet of Augustus; every authority, living or dead, likely to throw light upon the subject was consulted, and Mrs. Clarke's taste was called forth to make drawings from various sources for the illustration of it; and finally at the end of three weeks was produced his Dissertation on the Lituus; which, whatever becomes of the signet or its history, will live to evince his extraordinary industry and ingenuity, and farther to establish a distinction between two antique symbols, the Lituus and the Pedum, which had hitherto been much confounded. The work was read before the Antiquarian Society in 1820, and published in the Archæologia for 1821; and both before and after its publication was the subject of a correspondence with Dr. Blomfield and Mr. Payne Knight.

In the course of the same year, a number of resident members of the University, mutually known to each other, and chiefly devoted to scientific pursuits, associated together for the purpose of founding a Philosophical Society at Cambridge. Of this scheme, whose direct object was the promotion of science, and its natural tendency to raise the credit of the University, Dr. Clarke was of course one of the earliest and one of the most zealous advocates and supporters; and as it was thought advisable, that some address should be provided explanatory of the design and objects of the Institution, he was requested by a sort of temporary council, to draw it up. Accordingly he undertook the task, and his address having been read at the first meeting, was afterward printed by order of the Society, and circulated with the first volume of their Transactions; although for some reason it was not connected with the volume. Nor did his anxiety for the support and honour of the Society rest here; he wrote letters to almost all the literary men of his acquaintance, to request their co-operation and support; combated with great spirit in several instances, the opposition that was made to it from others; and during the short remainder of his life, contributed three Papers, which were printed in the first volume of their Transactions.

1. On the Chemical Constituents of the Purple Precipitate of Cassius.

2. On a remarkable Deposit of Natron, formed in cavities in the Tower of Stoke Church, in the parish of Hartland, in Devonshire.

3. Upon the regular Crystallization of Water, and upon the form of its primary Crystals.

In the midst of all these engagements, it is extremely gratifying to remember, with what readiness and earnestness he applied himself not only to his ordinary duties as a clergyman, but even to some additional ones which at that time fell to his share. He preached six sermons during these two years, at St. Mary's; three of which, forming a series upon prayer, were exceedingly interesting and affecting when delivered, and must be considered as fine compositions now; but what redounds still more strikingly to his credit, he undertook, under very critical circumstances, and at the special request of the principal persons concerned, the duty of an important parish in Cambridge, whereby he added greatly to his clerical labours and responsibility; inasmuch as his congregation, being partly academical and generally more enlightened than that at Harlton, required a different style in the composition of his sermons. Most of these last transactions took place in the course of a year, respecting which he himself records, that he had not a single day's health in it.

The history now advances towards the close of a

life which had been long struggling with labours disproportioned to his strength, and was at last seen to sink under the workings of mind too powerful and too active for the mortal part with which it was united. The progress of his disorder was slow, but the steps of it were strongly marked; and as they present his character in a new light, and afford withal a salutary lesson, although it is confessed of very limited application, against the danger of excess, even in laudable pursuits, some of the most remarkable will be thought worthy of notice. At no time since his return from his last journey to the continent, could his health be considered as well established; even at Trumpington, a situation in all respects favourable to it, he had several severe attacks in the stomach and bowels, which were renewed at shorter intervals after his return to Cambridge, where his habits became more sedentary, and his studies more unremitting and severe. Besides many other occasional derangements of his system, there was scarcely a single year in which the exertions and confinement attending his Lectures did not bring on some serious illness, frequently accompanying, but generally following them; and when these were over, instead of relaxation and repose, he often found such long arrears of composition or correction for his Travels as required the strongest application to recover. At these moments when compelled to continue his labours in a state of weakness and exhaustion, he would some-

times complain to his friends that the burden of them was too heavy for him; but the general tendency and principle of his mind was to contend with them and to overcome them; and so far was he from declining his accustomed duties, as his strength decreased, that to the very last, he was always ready to undertake any new one, which either a sense of duty imposed, or even his own good nature brought upon him. "I believe," says he, in a letter to Dr. D'Oyly, in 1816, "I *senectute*, for I knock up sometimes with my duty at Harlton. Yet I have lived to know that the great secret of human happiness is this; never suffer your energies to stagnate. The old adage of 'too many irons in the fire,' conveys an abominable lie. You cannot have too many; poker, tongs, and all—keep them all going." Nor was it in truth so much the number and variety of his employments that broke down his health, as the extreme and intense anxiety with which some of them, particularly the philosophical, were pursued by him; an anxiety which intruded upon his hours of rest, and rendered him insensible to those corporeal warnings which usually guard other men against too continued or too intense an employment of their faculties.

In 1816, the year following that of the Cambridge fever, he writes to a friend that he was laid up exactly as he was the year before, in consequence of his Lectures; but adds, with his usual spirit, "I trust, however, the vessel will still float, especially as

it has been lately so buoyant, for I never had so good an audience, and never enjoyed the thing so much myself." In 1818, he had a sudden and severe attack of illness in returning from his church at Harlton, which he thus describes:—

"You left me going on in a fair way to drop off the perch at last; and so, very effectually, I did. What with public lectures in the day time, proof sheets day and night afterward, long sittings, and long fastings, as I was returning from Harlton, last Sunday, after rather more than usual duty, but, as I thought, in good health, I was seized in the middle of my ride home, and in the midst of a storm, with faintness and excessive languor, and unable to remain on horseback. Dickes, of Jesus College, overtook me, and conveyed me into a house by the road-side, whence I was removed in a chaise: and I have been ill during all the last week. I am now a little better, but very weak, and muster all my strength to write this long letter to you."*

* This letter was addressed to a young officer, a near relation of Dr. Clarke (Lieutenant Chappel of the Navy), in whose welfare he always took the greatest interest. This gentleman was an author himself, having written an account of two voyages to the north, in which he was employed: and the remainder of the letter is so full of good sense, that a part of it has been here subjoined:

"There are two or three points to which you should look in all your future compositions. Avoid a redundancy of epithets —they rarely do any service; and where there is ambiguity, they

The next year he found himself so weakened and exhausted about the close of his Lectures, that he went to town to consult Dr. Bailey, from whose prescriptions he does not seem to have derived much benefit. In 1820, besides his usual chronical complaints, he was attacked again with a low fever, which confined him to his house, and for several days to his bed; his medical attendants, as well now as afterward, differing exceedingly from each other as to the nature of his complaints. Nevertheless, he took all their medicines in turn, besides many other specifics recommended by his friends, while he rejected with a strange perversity, the only remedy in which they all agreed, viz. relaxtion from his philosophical pursuits, and cheerful and moderate exercise. Such, however, was the force with which he rallied from these attacks,

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are always at the bottom of it. Again, in your Voyage to Newfoundland, you use sometimes what are called *fine* words, instead of manly diction; you talk of *profundity* instead of *depth*—of *altitude* instead of *height*—than which, nothing can tend more to lower our estimation of a writer's taste or genius.—It is making a reader sick with the vulgar *sweets* of novels and newspaper puffs, written by the misses and governesses of the 'Boarding-schools for young ladies upon a genteel plan.' To confess the truth to you, it is what I have been endeavouring to unlearn, ever since I became an author; for although uneducated at these 'boarding-schools,' yet I was made to imbibe something of this at a very early period of life."

and such the courage and even cheerfulness with which he bore himself under them, that no serious apprehensions of immediate danger were entertained by his friends or medical advisers, who could scarcely bring themselves to believe that a spirit capable of such continued and increasing exertions, and abounding in such playful and amusing sallies, was actually hastening towards its earthly term; and as a proof of this general persuasion, it may be mentioned, that so late as the summer of 1821, an insurance was effected on his life. In that year indeed he had gone through his Lectures with more than usual ease, and finished them, as he records in his journal, in good health. Not long after their close, however, new and more formidable symptoms began to appear; violent and continued head-aches, deafness, dizziness, weakness of sight, and to crown this afflicting list, a polypus in his nose. For this, the most pressing of his complaints, he went to town on the 16th of August, and immediately and cheerfully submitted to an operation by Sir Astley Cooper, from which he returned with fresh spirits and a sensation of general relief; but scarcely had he time to breathe from this operation, before his family was visited with a calamity which absorbed every feeling for himself, and caused what his own sufferings never did, a suspension of all his literary pursuits. His wife, far advanced in pregnancy, and three of his

younger children, sickened one by one with a Typhus fever; and in a few days were all reduced by the violence of the disorder to a state of the most imminent danger. What he felt during this period, and what he went through, can only be judged of by those who were acquainted with the general tenderness of his nature, as well as with his passionate affection for his wife; but it may be affirmed with truth, that there never was a moment of his life in which his conduct appears to so great advantage under so many points of view. It would be difficult to find any where a more affecting picture of conjugal and parental tenderness—of self devotion for the sake of others*—of firmness, watchfulness, and solicitude, than the letters written by him to his friends under these afflicting circumstances disclose.

During the period of the greatest danger, he was constantly employed night and day in going from one bed to another, supplying the wants of the patients, studying the appearances of the disorder, and watching the alterations that took place; and once, when the servants all broke in upon him in a body at the dead of night, and told him to send for some friend as one of the children was certainly dying, and another nearly in the same state, so far from sinking under the shock of this intelligence, he had

* See Appendix.

the presence of mind to calm their fears, and to inspire them with better hopes. In all this, however, he may be thought to have only followed the natural bent of his benevolence, strongly excited by the danger of persons so dear to him; but the document upon which the attention of his biographer has been chiefly fixed, as indicative of higher virtues, is a small pocket-book, kept for his own use, in which are noted down from time to time the changes of the disorder, and his own thoughts arising out of them; thoughts which, however various or powerful the passions that gave them birth, always terminate in devotion: the moment of extreme peril for Mrs. Clarke is recorded with an earnest prayer to the Father of all Mercies for better times: the account of her convalescence is closed with the heart-felt praise—God be thanked, the Author of all good gifts. Such are the trying circumstances in which true piety is manifested; and these silent breathings of his soul in communion only with his Maker, will be remembered with comfort by his friends, when all that delighted in his conversation, or informed in his writings, will be regarded with comparative indifference.

Mrs. Clarke was seized with the fever on the 21st of September, and was declared convalescent in the middle of October; but as another severe trial awaited her, his anxiety for her was not

removed till the 1st of December, when, almost beyond his hopes, having been safely delivered of an infant in perfect health, every fear for her well-doing was removed. It was then, and not till then, that he resumed his occupations with his accustomed ardour, pressing forward with the last volume of his Travels, and entering upon a course of experiments with the ores which produce Cadmium: and although the symptoms of his disorder had now returned upon him, aggravated extremely by the fatigue and anxiety he had lately undergone, they seem neither to have depressed his spirits, nor to have damped the ardour of his pursuits; of which the following trait will be considered as a proof. In the course of the summer, his relation, the Rev. Mr. Newling, had frequently directed his attention to a collection of minerals, in the neighbourhood of Lichfield, advertised for sale in December, in which, among other valuable specimens, was a piece of rock crystal enclosing a drop of moveable water. For this Dr. Clarke became the successful bidder at the sale through his friend, and having learned afterward that a young lady had been his competitor, whose disappointment was said to have cost her a tear, he wrote some verses to console her, and desired his cousin to lay them at her feet, with the intimation, which he hoped would be his excuse, that the specimen was intended for his Lectures. To shew

the spirit of the man at such a moment, as well for the sake of the pious thought contained in them, it has been thought right to insert them here.

Fair lady, on thy tender cheek,
No tear for this may shine;
This tear will often deftly speak
Thy Maker's praise and thine!

Here, fix'd within its crystal fount,
The dew of Heaven appears;
Such dew as erst from Hermon's mount
On Sion fell in tears.

This limpid drop a sacred theme
Still as it moves ordains,
And speaks the hand of pow'r supreme
That omnipresent reigns.

From the end of this month, however, the sense of his disorder seems to have been more painful, and the progress of it more rapid. Writing to a friend, he says,

"The deafness, noise in my ears, and giddiness, has so much increased, that I have applied twenty-four leeches to the back of my neck. What makes me write to you is, to ask why you were cupped? Was it not for a similar complaint? Yesterday I should have fallen down if I had not caught hold of one of the cabinets in my Lecture-room; a sound like distant cannon rushed into my ears, attended

with dimness of sight, and extreme giddiness. I believe it is all from the stomach—but it was increased tenfold by the late illness of all my family. Thank God! they are all well."

These distressing symptoms were soon after followed by a sort of crisis in the disorder, during which he was more thoroughly sensible of the perilous state of his own health, than at any other period either before or after. For the first time of his life he entertained thoughts of suspending for a while the duties of his church, and of giving up his Lectures for the next year; and to Mrs. Clarke he stated with great tenderness, his apprehension that he should not recover; expressing, however, no fear of death on his own account, which he considered as the Christian's rest, but lamenting the probable desolation of herself and her children when left alone to struggle in the world; while to his brother, whom he saw at Windsor in January, when he took his boys to school at Eton, he expressed more decidedly his conviction, in his own emphatic way, that he was sent for.

A short and deceitful interval of ease followed, in which the intermitting of the disorder gave him reason to hope that he was slowly recovering; and under this impression he entered once more, in the middle of the month, upon a course of chemical experiments, preparatory to his Lectures, which were to

begin in March: but from the moment he had stepped within the circle of these fascinating operations, there was no longer either thought or power of retreating; for the usual excitement attending this preparation, co-operating with the effects of the disorder, which ultimately terminated in an affection of the brain, brought on a course of unnatural efforts, infinitely exceeding all his former imprudences, and partaking strongly of the delirium which quickly followed.

"I have left him in an evening," says a friend, "about this time, with a promise that he would go to bed, and on the following morning have found that he had been up a considerable part of the night, engaged in a series of unwholesome operations with sulphuretted hydrogen." In this melancholy state of self-abandonment, deaf to the remonstrances of his friends, insensible of his own danger, almost incapable of self-control,* and intent only upon the due

* The letter which follows, written a few days before his removal to town, will convey some notion of the state in which he was at this critical period. It was addressed to the Rev. Mr. Lunn, who frequently assisted him at this time in his operations, and to whom the author of this Memoir is indebted for much valuable information respecting the pursuits and productions of his latter years:—

"After being up all night, and taking more care than I ever did before, I lost every atom of the Cadmium, owing to too great heat in the last evaporation. It came away in orange-coloured fumes, very pretty, but very alarming to me. I must be trou-

performance of his approaching duties, he supported an ineffectual struggle with his disorder till the middle of Feb. when his strength entirely failing him, and being no longer able to stand up, he sank reluctantly into his bed, and from thence dictated to his servant the course of operations he wished to pursue, and there received from him the results. Up to this time, however, the arrangements of his mind seem to have been vivid and distinct as far as philosophy was concerned, and its energies unabated. His last paper, in Dr. Thomson's Annals, is dated the 6th of February, and contains a clear statement of a complicate operation in chemistry, for obtaining Cadmium from sheet zinc. On Tuesday the 12th, he wrote from his bed upon the same subject to Mr. Lunn; and on Thursday the 20th, another letter to Dr. Wollaston, reporting his last operation. On Friday the 21st, Mr. Lunn saw him, when he was quite rational upon this subject, as far as he was permitted to speak, though sick and in bed. On Satur-

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blesome to you to beg for all my zinc back again, except as much as will enable you to say if lead be present. I am going to work on five hundred more grains in my Lecture-room. But never collect the sulphuret on a filter. It sticks to it as my illness does to me; and by boiling the filter in muriatic acid, this acid was contaminated with sulphuric acid, though I washed it repeatedly. I expect not to find more than one per cent. of Cadmium. "E. D. C."

day he was carried to town for advice, by Sir William and Lady Rush, where he was attended by Sir Astley Cooper, Dr. Bailey, and Dr. Scudamore. But their efforts to save him were in vain; the rest of his life, about a fortnight, over which a veil will soon be drawn, was like a feverish dream after a day of strong excitement, when the same ideas chase each other through the mind in a perpetual round, and baffle every attempt to banish them. Nothing seemed to occupy his attention, but the syllabus of his Lectures, and the details of the operations, which he had just finished: nor could there exist to his friends a stronger proof that all control over his mind was gone, than the ascendancy of such thoughts, at a season when the devotion so natural to him, and of late so strikingly exhibited under circumstances far less trying, would, in a sounder state, have been the prime, if not the only mover of his soul. One lucid interval there was, in which, to judge from the subject and the manner of his conversation, he had the command of his thoughts as well as a sense of his danger; for in the presence of Lieutenant Chappel and Mr. Cripps, he pronounced a very pathetic eulogium upon Mrs. Clarke, and recommended her earnestly to the care of those about him; but when the current of his thoughts seemed running fast towards those pious contemplations in which they would naturally have rested, his mind suddenly relapsed into the

power of its former occupants, from which it never more was free. At times indeed gleams of his former kindness and intelligence would mingle with the wildness of his delirium in a manner the most striking and affecting; and then even his incoherences, to use his own thought respecting another person, who had finished his race shortly before him, were as the wreck of some beautiful decayed structure, when all its goodly ornaments and stately pillars fall in promiscuous ruin. He died on Saturday, the 9th of March, and was buried in Jesus College Chapel, on the 18th of the same month.

He left seven children, five sons and two daughters; the eldest son not fifteen years of age at the time of his death.

Few persons have left the world more honoured or more regretted. The tears of genius have been shed around his tomb, and every mark with which respect or kindness can honour departed merit is preparing to grace his memory.

A monument, erected in Jesus College Chapel, near his grave, at the expense of his fellow collegians, will serve to stimulate the youth of that society in the paths of enterprise and science: a bust, executed by Chantrey, at the cost of his literary friends, principally members of the Philosophical Society, at Cambridge, will perpetuate the honour of one of its most distinguished ornaments and founders: while his

collection of minerals,* fixed by the liberal suffrages of the University within its precincts, will remain an appropriate memorial of the respect paid by that body to their first mineralogical professor. But the best proof of the many excellent qualities of his heart, is the sincere and ready kindness shewn towards his family since his death—kindness not less honourable to human nature, than to the individual for whose sake it has been exerted—derived not from the wealthy or the great, by whom it would be lightly felt, but from persons of his own rank and means, and involving sacrifices which nothing but friendship and affection could warrant.

His character will be best gathered from his writings and his life, and to them perhaps it would be wiser to intrust it, but the friend who has paid this tribute to his memory, cannot quit his task without endeavouring to bring together some features of a portrait, which ought to represent, one of the most amiable and the most intellectual of men.

The two most remarkable qualities of his mind were enthusiasm and benevolence, remarkable not more for the degree in which they were possessed by him, than for the happy combinations in which they entered into the whole course and tenor of his life; modifying and forming a character, in which the

* His collection of mineralogy was valued by Mr. Hewland at 1100*l.* but the University voted for the purchase of it, 1500*l.*

most eager pursuit of science was softened by social and moral views, and an extensive exercise of all the charities of our nature was animated with a spirit which gave them a higher value in the minds of all with whom he had relation or communion.

His ardour for knowledge, not unaptly called by his old tutor, literary heroism, was one of the most zealous, the most sustained, the most enduring principles of action, that ever animated a human breast; a principle which strengthened with his increasing years, and carried him at last to an extent and variety of knowledge infinitely exceeding the promise of his youth, and apparently disproportioned to the means with which he was endowed; for though his memory was admirable, his attention always ardent and awake, and his perceptions quick and vivid, the grasp of his mind was not greater, than that of other intelligent men; and in closeness and acuteness of reasoning, he had certainly no advantage, while his devious and analytic method of acquiring knowledge, involving as it did in some of the steps all the pain of a discovery, was a real impediment in his way, which required much patient labour to overcome. But the unwearied energy of this passion bore down every obstacle and supplied every defect; and thus it was, that always pressing forwards without losing an atom of the ground he had gained, profiting by his own errors as much as by the lights of other men, his maturer advances in knowledge often extorted

respect from the very persons who had regarded his early efforts with a sentiment approaching to ridicule. Allied to this was his generous love of genius, with his quick perception of it in other men; qualities which, united with his good nature, exempted him from those envyings and jealousies which it is the tendency of literary ambition to inspire, and rendered him no less disposed to honour the successful efforts of the competitors who had got before him in the race, than prompt to encourage those whom accident or want of opportunity had left behind. But the most pleasing exercise of these qualities was to be observed in his intercourse with modest and intelligent young men; none of whom ever lived much in his society without being improved and delighted —improved by the enlargement or elevation of their views, and delighted with having some useful or honourable pursuit suitable to their talents pointed out to them, or some portion of his own enthusiasm imparted to their minds.

As a parish priest, in which capacity his character has not been touched upon, he was kind, charitable, and attentive; not contenting himself with his prescribed duties on a Sunday, but visiting his flock frequently in the week as occasion required, and otherwise employing himself in devising means for their spiritual welfare and improvement. Among these may be mentioned a Sunday school, which he established and conducted himself with unusual attention

and success, catechizing the children from the reading-desk, and making them repeat their lessons in the presence of the congregation, whom he thus contrived to interest in their progress. Nor can his friends easily forget the delight with which he was accustomed to carry over to Harlton, caps, bonnets, ribands, &c. prepared by Mrs. Clarke, as rewards for the most deserving of the children. It is almost needless to add, that as a preacher he was popular and eminent; for endowed as he was with so many requisites for eloquence, and capable of animating the tamest and most ordinary subjects, it would have been strange indeed if he could have been any thing but powerful and energetic when engaged in topics involving the deepest interests of humanity, and inspired by a book, which, independent of its doctrines and precepts, was always regarded by him with the utmost admiration and reverence. But it is pleasing to record upon the most unquestionable testimony, that the effect of his discourses from the pulpit was even more striking and persuasive than his fine qualities might have given reason to expect. The crowded audiences, both of young and old, which always attended him at St. Mary's, afford the best proof of the estimation in which he was held by the University; and the subjoined letter from a prelate with whom he was intimate, relating to a sermon delivered in his parish church of All Saints, in 1820, will furnish an interesting specimen of the effect pro-

duced by him in the discharge of his more ordinary duty.* His sermons which remain, exhibit great eloquence and pathos, and some of them may probably hereafter be given to the public.

Of that happy combination of qualities and endowments for which he was so distinguished and admired in general society, enough perhaps has been already said, although it would be difficult to do justice to such a theme. It may be added, however, that though he often gave the tone to the conversation, he was more disposed to bring forward the opinions of other men than to take the lead in it himself, and the genuine delight with which he hailed a bright or good thought from others, was one source of the pleasure which he gave.

In the bosom of his own family, and in the inter-

* "I have read your sermon which I now return with a thousand thanks. It is, positively, one of the most affecting and eloquent, and at the same time, well connected and well arranged compositions I ever read. Such appeals, and so delivered as this was and all are that come from you, must have sent away many a heart, torn for what had passed, anxious to make amends, if amends were in their power, and excruciated if the opportunity of amended conduct were removed from them for ever. You are, yourself, scarcely aware of the effect produced by such powerful addresses to the human heart.

"May God long keep you to your family, and to those who have the fortunate opportunity of hearing such words of Christian instruction.

"Ever most faithfully yours."

course of intimate friendship, he was more kind, engaging, and affectionate, than can be well conceived by those who did not know him. It was here that the warmth of his heart, and the cheerfulness of his spirit appeared to most advantage, and though the slightest acquaintance was enough to excite an interest in his behalf, yet the nearer he was approached and the more intimately he was known, the more delightful did he appear. His tête-à-tête conversation with a friend was a perpetual flow of humour, kindness, and intelligence, in which every fold of his heart was laid open, and the confidence and even energies he felt were almost certain to be inspired. It was quite impossible for an intelligent man whom he regarded to be dull in his society, or to have occasion to inquire within himself what he was to say. In fine, all who were closely connected with him must feel that with him one great charm of their existence is gone. In public life his loss will be long and severely felt; but in private it is irreparable. In the walks of science his place may be supplied; another traveller equally patriotic and enlightened, may like him enrich his country with the spoils of other ages, and of other climes; and his mantle may be caught by some gifted academic, who will perhaps remind his audience of the genius and eloquence they have lost; but the void occasioned by his death in the breasts of his family and friends can never be filled up.

The following lines, which are a tribute of affection to Dr. Clarke from the pen of Professor Smyth, touch with so much truth and feeling upon the most memorable points of his life and character, that they can no where find a more appropriate place than in the close of a work dedicated to his memory.

Far o'er each tract renown'd, each distant land,
From Lapland's snows to Egypt's burning sand
The traveller pass'd—and willing Fame had now
Placed her bright wreath upon his honoured brow;
Granta's calm bowers had round him seemed to close,
And happy Love had sooth'd him to repose.
'Twas then that science to his ardent view
Unveil'd her opening worlds of promise new.
—Alas for man! the being of an hour!
Frail heir of endless hope, but bounded power!
Worn, faint, beneath the still aspiring aim,
Exhausted, lifeless sunk th' unequal frame.
How vainly now may fall affection's tears,
How vain the bust which public homage rears,
While Friendship, with resistless grief inspired,
Sighs o'er the ardour which it once admired,
And mourns the genius, that with fatal sway
Had "o'er informed the tenement of clay."
Yet tho' on earth benighted and confined,
Not vain the towering hope, th' unwearied mind;
The dead shall live, another and the same,
The sage's fire shall be the seraph's flame;
The veil shall part, and o'er the dark unknown
Be pour'd th' effulgence of the living throne.

APPENDIX.

APPENDIX.

No. I.

Critique on the Character and Writings of Sir George Wheler, Knt. as a Traveller; in a Letter to the Rev. F. Wrangham.

MY DEAR WRANGHAM,

THE news that you are about to publish a Memoir of *Sir George Wheler,* by so eminent a scholar as *Dr. Zouch,* is as gratifying to me and to all your friends in this University as it will be to the literary world in general. There is not perhaps any part of *English* biography so destitute of information as that which relates to this accomplished, amiable, and I will add, illustrious traveller. Very little more at present is known concerning him, than what we gather from the narrative of his '*Journey into Greece,*' published after his return, first by his companion *Dr. Spon,* of *Lyons,* and subsequently by himself. You ask me to state my opinion of his merits as a traveller, and the character which I had formed of his writings, from my own personal observations, after comparing his descriptions with the places and many of the objects referred to upon the spot. I shall do this with the greatest willingness, because, during my travels in *Greece,* I had *Wheler's* book often in my hands: and I regret very much that, when I visited *Jerusalem,* I was not provided with the curious little tract upon the "*Primitive Churches*" published by him after he became

Prebendary of *Durham;* a work* now become rare, but admirably calculated for aiding the researches of travellers, who may wish to compare the present appearance of the Church of the *Holy Sepulchre* with the account given by *Eusebius*† of the original structure.

Respecting the merits of *Wheler,* as a traveller, there can be but one opinion among those who have had an opportunity of judging. That he was diligent in his researches, intelligent, faithful, a good naturalist, and a zealous antiquary, cannot be disputed. That he was profoundly learned, will perhaps not be so readily admitted. It may be said, that for the erudition displayed in his book of travels, he was mainly indebted to his companion *Spon;* a charge easily urged, and after all not so easy to be proved. *Wheler* confesses, that he copied into his work some passages as he found them already published by his fellow-traveller:‡ but the facts, to which those passages relate, may have existed previously in his own Journal; and, with regard to the erudition by which they are accompanied, the later writings of *Wheler* sufficiently prove that his literary attainments enabled him to supply every illustration of this nature.

The characteristics of the man, as gathered from the view of him afforded by his writings, seem to have been mildness and piety. That ardent love of his country, which in almost

* 'An Account of the Churches or Places of Assembly of the Primitive Christians, &c. by Sir George Wheler,' Lond. 1689.

† De Vitâ Constant. Lib. 3.

‡ "What I find Monsieur *Spon* hath omitted, I have supplied; and on the other side, what material things I found I had neglected in my own Journal, I added out of his book, if I well remembered them. When I met with any things to be mistakes, I have as freely corrected them, and in dubious criticisms I have given my own opinion and reason."—*Journey into Greece, Preface,* p. 3. *Lond.* 1682

every *English* traveller is increased by the privations sustained in foreign territories, and especially when he beholds the state of oppression and degradation into which the inhabitants of the *East* have fallen, is remarkably conspicuous in *Wheler*. Upon his return to his native land, he breaks forth in exclamations of gratitude to the Supreme Being,* "who had placed the lot of his inheritance in a land that he had blessed and hedged about for himself; where nothing is wanting to supply the defects of frail nature; where every man's right, from the prince to the peasant, is secured to him by the protection of good and wholesome laws." To feel the truth of this in its full force, and to be made duly aware of the advantages possessed by *Great Britain* over every other nation upon earth, it is only necessary to know what the condition of society is in other countries, and how their governments are administered. Alluding to his own pious habits of reflection "upon the various events of things, and the phenomena of nature," and foreseeing that there were some to whom this serious turn of mind would not be pleasing, he says;† "As to men of this irreligious temper, I make no other answer, but that I designed to write as a Christian traveller and philosopher; and if my book be unacceptable to them, because it savours of my religion, they may leave it (as they do their Bibles) to others, who will like it better upon that account." What the effect was of such habits upon a temper naturally amiable, appears in the account which he has given of his state of mind, after being deserted by his companion *Spon*, the day of their separation at *Turco-Chorio*. I remember being much struck with the passage, having had the satisfaction of reading it upon the very spot where they parted:—"Thursday, the ninth of March,‡ being

* Journey into Greece, p. 482. Lond. 1682. † Ib. Pref. p. 3.

‡ Journey into Greece, p. 463. Lond. 1682.

separated from my companion, I left *Turco-Chorio,* bending my course eastward to go to *Thalanda.* The first thing that diverted me in that solitary condition was, that I soon found myself on a long straight way, fortified with a deep ditch on each side, leading to certain hills which I saw a good way off before me. This I took as a good omen, portending success to my undertakings: it seemed to admonish me, that I should not fail to be guarded by God's good Providence, so long as I travelled in the straight way of virtue and true piety to my heavenly country, which is on high." Some of *Wheler's* discoveries in *Greece,* although nearly a century and a half has elapsed since they were made, have not even yet been duly regarded. One of the most remarkable, as illustrating the ancient history of that country, was his finding the splendid remains of the *Isthmian town,* where the ISTHMIA were celebrated; I own not noticed by *Mentelle* in the work which he subsequently composed for the French *Encyclopedie,** nor mentioned (as far as I am informed) by any writer upon *ancient Geography.* Modern authors indeed, with the exception of *Wheler,* seem not to have been aware that any such *town* existed; and after the description which he has given of the place, and the remarkable *inscription* which he found upon the spot and published in his Travels,† such has been the oversight or neglect of the travellers who have followed him, that we have no account of any one of them having visited those ruins. *Chandler* even ventured to assert, that "neither the *Theatro* nor the *Stadium* were visible."‡ I arrived upon

* *Encyclopédie Methodique, Geographie Ancienne, par M. Mentelle,* &c. 3 vols. 4to, Paris, 1792.

† *Chandler* says the marble has been removed, and is now preserved in the Museum at *Verona.* The inscription begins Θεοις Πατριοις και τη Πατριδι, κ. τ. λ.—(See Wheler's Journey into Greece, &c. p. 438. Lond. 1682.)

‡ Travels into Greece, p. 243. Oxford, 1776.

the spot in 1801, and found every thing that *Wheler* had said fully confirmed, in a view of the place. The *Theatre* remained, facing the Port *Schoenûs;* together with the *Stadium,* and the ruins of the *Temple of Neptune,* upon an area two hundred and seventy-six paces in length and sixty-four in breadth. Many other reliques of the most magnificent buildings were, also, scattered about in promiscuous disorder. Among these ruins, the peasants of the neighbouring villages of *Hexamillia* discover ancient medals of almost all the States of *Greece;* nor is there perhaps any spot in the whole of that country, which would better answer the purposes of making excavations in search of antiquities. Since my return to *England,* I have constantly endeavoured to direct the attention of travellers towards those ruins; but even the site of them is not yet laid down in any other map than in the diminutive sketch prefixed, as a *vignette,* to the chapter of my Travels in which those ruins are described.* A topographical chart of the whole *Isthmian* territory is much wanted, in order that the situation of the town where the ISTHMIA were celebrated, and its relative position with regard to *Corinth* and the other cities of *Peloponnesus* and *Achaia,* may be assigned for the ancient geography of *Greece.*

Other obligations due to *Wheler* are better known. The valuable additions made to *Natural History,* by the number of rare plants described in his Travels, need not be enumerated; because there is hardly any work of general *Botany,* in which his name and discoveries are not commemorated. His *Geographical* observations were highly valuable in the time when they were made. Before the appearance of his work, there was not a *map of Attica* upon which the smallest reliance for accuracy could be placed. He was the first traveller in

* See III. 18. p. 741. 4to edit. Lond. 1814.

Greece, who adopted the practice of taking a mariner's needle to the tops of mountains for the purpose of making observations of the relative positions of places, and thereby reducing those positions into triangles. "Although," said he,* "this be but an ordinary rule in surveighing, yet in those countries where from a mountain one may see twenty, thirty, forty, and fifty miles about, it may prove of more use and certainty than all the rest of the geographical art of longitudes in the world."

The stile of his narrative possesses the quaintness characteristic of authors, who wrote English prose in the seventeenth century, and sometimes to a degree that reminds us of his predecessor *George Sandys;* as, for example, when in describing the *Cameleon* he says,† "*One that I opened had guts.*"

The "*Sculptures,*" as he terms the Copperplates, introduced into the text of the different pages of his narrative are wretched performances, seldom bearing any resemblance to the things they were intended to represent; with the exception only of the plants and medals which he has figured, and these are better done, considering the time when they were engraven. But as it is not my intention to point out the defects of his work, I shall pursue this subject no farther; being actuated only by a desire of rendering a just tribute of acknowledgment to a traveller, who at so early a period offering an example to his countrymen, voluntarily engaged in an enterprise of fatigue and danger, "CUPIDINE VETERES LOCOS ET FAMA CELEBRATOS NOSCENDI."

I remain, my dear Wrangham, &c. &c.

EDWARD DANIEL CLARKE.

Cambridge, June 11, 1819.

* Journey into Greece, &c. Pref. p. 3. Lond. 1682.

† Journey into Greece, p. 249.

No. II.

Dr. Clarke was no politician; but he was a great admirer of Eloquence in every department of it; and we regret that this letter, which, it is remembered, closed with an animated and singular representation of Mr. Pitt's speech, should be now a fragment.

"*Committee Clerk's Office, House of Commons, One o'Clock*, P. M. 1803.

"*Dear Otter*,—How I must economize this paper! The physicians and my friends all pronounce me mad! I jumped out of my sick-bed this morning, determined to be present at the most important debate this country ever knew; and came pale and panting to the House of Commons. Never was there such a sight. I was here so early as eleven; but from eight o'clock people have been waiting, and will wait, standing on the cold pavement, till five; for the gallery is not to be opened till after prayers, and constables guard all the avenues. You have no idea of the mob, among which are many people of distinction, already hungry and tired, standing with a scrap of a pamphlet, or reading over and over advertisements in the papers. I'll answer for it they will not get away before to-morrow's sunrise. How is it then, I sit here at my ease; for such waiting and squeezing would have killed me. —— is gone to Epsom. I sent the boy in; but went alone to E. Stracey, in Fludyer-street, who brought me, snug, to sit grinning in his office, which opens into the Lobby of the House of Commons; so, the moment the Speaker comes, I shall *demande la parole* of the door-keeper, and strut in with the Members, as *shaky* and *diaphonous* as a jelly, and fit to pass for a specimen of *crystallized Quinsey*. In the mean time,

of Stracey's office window, I have begged this large piece of paper of one of the clerks, and folded it in true *official* mode, that you may be epistolized.

"Considering the debate that will ensue to-night, as the most extraordinary in all its consequences and characters, that the history of the Nation of Europe will ever record, I shall send you the paper that gives the respective speeches with the greatest fidelity. I never was prepared for higher interest, in any discussion, public or private. The events within the few last weeks have been all astonishing, unaccountable: things that could not be foreseen; and we are now to hear the greatest orators the world ever did, or perhaps ever will know, decide whether Britain or France is to hold the first rank among the nations. The ears of all Europe are open, wide, expanded; eagerly waiting to hear what will be said this night. Perhaps the event may be looked to; but it is a discussion so singular, so open to the display of talents, of patriotism, of intrigue, of masterly policy, of all the passions, and all the arts, and hypocrisies, and contrivances, and ambition, and genius of man. Who would not be present on this night, even if he lived not to reach another? I know well what is thought of England on the Continent; how, in the midst of all their pretended ridicule and contempt of John Bull, is couched terror, and respect, and watchfulness; and how eagerly they wait for news of what passes in the minds of Englishmen and the decisions of our senate. Now then, all awake and gaping, and wondering, how will they look to the result of this night! It is no longer Bonaparte, but John Bull, who is to give peace or war to Europe. Bonaparte, who in a few short months has let himself down in the broad parachute of public opinion, from a height greater than any human being ever attained before. Who shews that he is not only mere man, like other men, but not to look any longer at the black walls and smoky tiles out

a *little, little, little,* man; once the *wonder,* now the sport even of fools. When seen at a distance, an awful countenance—when examined near, a brick."

"*Tuesday morning.*

"In the middle of this analysis of Bonaparte, came in E. Stracey, to tell me, a Member would conduct me through the House to the Committee-room. By this means I had the choice of a seat in the gallery, and sat in front during the debates. But when the mob broke in, such a scene ensued as was never beheld in the House of Commons before. I find all the reporters of the Papers were thrown out, and you will see in the Morning Post the history of the Committee scheme. I have been to the editor, and offered to give him Pitt's speech, but he says the proprietors of all the Papers are determined to give the debates no more if the order is not taken off. The debate is not yet over; it is postponed to this night. I staid till the middle of Gray's speech, and came away. The impression made on me by Pitt's amazing eloquence made all the rest appear stuff and nonsense.

"The Debates were opened by Jekyll's asking ministers for more official papers, and Lord Hawkesbury assured him there were none. Then Lord Hawkesbury began to explain the conduct of Ministers since the Treaty of America, in a long speech. He was followed by Mr. Erskine in a speech which kept the House in laughter. Then rose Pitt. I have heard him upon almost all the great occasions in which he has shone, but never was his eloquence so powerful. At first, out of hisusual way, he was full of fun, and ridiculed Erskine and Bonaparte with wonderful effect; then in a most solemn but beautiful address to the passions, he called upon the House for their——

No. III .

The Author has noticed in more than one place of these memoirs, the eagerness with which Dr. Clarke always hastened to direct his philosophical discoveries, whether more or less important, to some private or public benefit: and the following letter will shew that he was still, in this predominant feature of his character, the same person who, when a child, so anxiously brought from Surrey to the old women at Uckfield, specimens of prepared reeds to save their candles.

"*August* 10, 1813.

"*My dear Cripps,*—A letter from Tennant came in your parcel. Have you seen him? A *hint* that he gave me, as to the constituents of the *instantaneous lights,* has enabled me not only to make out the whole process; but also to discover a great improvement in making them: and the first use I design for my chemical conjuring box is to send it to you, to stand during summer upon your writing table, that when you want a light, to seal a letter, your old companion may excite it for you, and make you sometimes *remember him.*"

"*August* 22, 1813.

"I send you with this a specimen of the further improvement I have made in the *Promethean* matches; and I think they will surprise you. Get your little bottle entirely cleaned out, and make the apothecary drop in enough sulphuric acid just to reach with a match, like ink at the bottom of

a wedgewood inkstand; dip one of these matches in—take out the match quickly; because too much acid puts out the fire. On this account the London people use bottles containing a sop of Asbestos, acting like a sponge; but I have found out *their entire secret*. Mr. Watson, chemist, of Cambridge, has applied to me to give the *recipe* to him; but I have given it to my man Johnson; who supplies all the shops in Cambridge with matches at half the London price. You will find mine to be better than those made in London. And the acid which your bottle will contain will last good for four hundred matches before you need alter it, and then *a drop* of the acid is all that will be required; only take out all the pounded glass, as of no use."

"*Trumpington, Sept.* 7, 1813.

"I have now brought my matches to perfection; and far beyond the London manufacture; as you will see by the enclosed. Johnson will make a *little fortune* by them. He sells them by thousands; and it will help him to pay for his wife's confinement and furniture. With 2*s.* 6*d.* of materials he makes as many matches as he sells for eight shillings; and he literally earns during his leisure hours at the rate of five guineas a week. He is beginning now to send them to London. All this came of a few words let fall by Tennant; although Tennant does not know how they are made. I discovered the secret; and if you will come here, I will not only teach you to make them, but set you to work in good earnest; and it is a most amusing job.

"Please to observe, as to your bottle: it must be cleaned out now and then; and when made quite dry by thrusting in a point of blotting paper, drop in some fresh sulphuric acid;

taking care always that the fluid *never rises above the bottom of the fountain.*

"To prevent awkwardness I have made it almost impossible for any one to fill the bottle higher than *a. b.* Yet some ingenious amateurs were trying the other day to force the acid up to *c. d.;* the consequence of which almost always is, that a drop of sulphuric acid, as black as your hat, falls from the point of the match in burning.

"You see it falling! take care it does not drop upon Charlotte's petticoat, or your pantaloons! It is always best to hold the ignited match over a small saucer. The London people make use of Asbestos to prevent this. If you can get a little very fine *cotton-like Asbestos,* you may take a small phial, with a glass stopper, and thrust in a *very, very* small quantity *lightly,* so as to lie puffy, and then drop in as much sulphuric acid as it will suck up, without letting any flow about the bottle. Then, my stars! how your matches will kindle!"

"*Trumpington, October* 21, 1813.

"The birth of my seventh son interrupted the little parcel I have now sent. You will see by it that I have brought my work to great perfection; insomuch that Mr. Watson, the chemist at Cambridge, has entered into a partnership with my servant *for the concern,* as wholesale agents; and supplies all the towns in England with the apparatus. Every article of it is prepared under my roof; and Johnson will earn enough by it to educate his little child.

"The most extraordinary part of it you will find in the bottle; *a newly discovered acid;* which instead of turning black

by the action of combustible bodies, like the *sulphuric acid*, actually becomes by use more and more transparent. When you light your matches, it is best only to touch the acid, for the ignition is so very powerful, that if immersed in it, the match will sometimes light in the fountain, and fill your little bottle with smoke. *The printed paper* I have drawn up for Watson; but do not mention the author."

No. IV.

The early passion of Dr. Clarke' for Gray's poetry, which has been already noticed, never faded during his whole life; and it was a great delight to him in the latter part of it to think, that the public taste was fast veering round towards his own.—The fragment quoted in the letter which follows, will be found in Mr. Matthias's edition of Gray, which, on account of its great price and size, is unfortunately but little known.

"*Cherryhinton, May* 15, 1814.

"*My dear Otter,*—My Lectures are again concluded; for the eighth year. I made my *congé* yesterday; after lecturing for an hour and a half, *stans pede in uno.* As a parting gift, I exploded a whole battery of *hydrogen;* and then gave them, to their utter astonishment, the description of a descent into the mines, by whom, do you think? aye, by whom? you might guess for a month in vain! By *our poet Gray,* in some unpublished lines, written by him at the age of 22, and which I ventured to improve on a little; but *mum!* as to that: here they are.

'Through subterraneous passages they went,
Earth's inmost cells and caves of deep descent;
Onward they pass, where ripening minerals flow,
And embryo *metals* undigested glow;
Where *gems* break through the night with glittering beam,
Or paint the margin of the costly stream;
All *stones* of lustre shoot their vivid ray,
Or mix attempered in a various day:

There the soft *emerald* smiles, of verdant hue;
There *rubies* flame with *sapphire's* heavenly blue;
The *diamond* there attracts the wond'rous sight,
Proud of its thousand dies and luxury of light!'

"I desire you will observe the singularly classical accuracy of 'There rubies *flame;*' the ruby being the *ανθραξ* of Theophrastus. This is always the case with Gray; in every word—in every thought—*in every inch*—(as they say at Cherryhinton)—a scholar and a poet."

The following letter of Mr. Gray, to Mary Antrobus, is found in a curious collection of autographs, made by Dr. Clarke in the latter part of his life, and is thus noticed by him:

"*Gray*, whose rising fame, augmenting with every succeeding year of my life, has finally triumphed over false criticism and the envious assaults of his contemporaries."

The letter itself will not be thought uninteresting. It was written to Mary Antrobus, on the day of his presentation to George III., upon his appointment to the Professorship of Modern History at Cambridge, and contains some traits highly characteristic of the poet.

"*29th July*, 1768.

"*Dear Mary*,—I thank you for all your intelligence (and the first news I had of poor Brocket's death was from you), and to reward you in part for it, I now shall tell you, that this day, hot as it is, I kissed the King's hand; that my warrant was signed by him last night; that on Wednesday I received a very honourable letter from the Duke of Grafton, acquainting me, that his Majesty had ordered him to offer me this Professorship; and much more, which does me too much credit by half, for me to mention it: the Duke adds, that *from private as well as public considerations, he takes the warmest*

part, in approving this measure of the king. These are his own words. You see there are princes (or ministers,) left in the world, that know how to do things handsomely; for I profess I never asked for it, nor have I seen his Grace, before or after this event.

"Dr. R. (not forgetting a certain lady of his), is so good to you and to me, that you may (if you please) shew him my letter: he will not be critical as to the style, and I wish you would send it also to Mr. Brown, for I have not time to write to him, by this post: they need not mention this circumstance to others—they may learn it as they can. Adieu.

"I receive your letter of July 28 (while I am writing). Consult your friends over the way; they are as good as I, and better. All I can say is, the Board have been so often used to the name of Antrobus lately, that I fear they may take your petition not in good part: if you are sure of the kindness or interest of Mr. A., the opportunity should not be lost; but I always a little distrust new friends and new *lawyers*.

"I have found a man, who has brought Mr. Eyres (I think) up to my price in a hurry; however, he defers his final answer till Wednesday next. He shall not have it a shilling lower, I promise; and if he hesitates, I will rise upon him like fury. Good night. I am ever

"Yours.

"How could you dream that St—, or Hinchl— would ask this for themselves? The only people that asked it were Lort, Marriet, Delavel, Tibb, and Peck—at least I have heard of no more. Delavel always communicated his thoughts to me, knowing I would make no ill use of that knowledge. Lort is a worthy man, and I wish he could have it, or something as good: the rest are nothing."

No. V.

This part of Dr. Clarke's correspondence relating to his own health, and that of his family, in the last year of his life, was mislaid during the printing of the first edition, and is now subjoined.

"*Cambridge, Sunday, Sept.* 23, 1821.

"*My dear Otter,*—I feel that you know nothing of what is going on, and, of all men, you ought to be the first informed. You can have no idea of the trials I have gone through lately. As my health grew more and more relaxed, I at last discovered something very high in the left nostril, which totally obstructed my breathing. It turned out to be a polypus, growing from Laminæ of the pituïtory membrane, or rather 'os ethmoïdes.' I was sent to London to Sir Astley Cooper, to have this polypus extracted; and he cut it out with marvellous skill: but my deafness, which was at first relieved, not by the operation, but by the journey, has returned, and is so increased that you will hardly know your old friend.

"The second act opens with the Cambridge fever in my house, and all my poor children, with leeches upon their temples, like false curls, or, as they are called, KILLEN. My angel of a wife, to save whose life I would lay down ten thousand such worthless lives as mine, having caught the fever from nursing her sick children, is extended upon her bed, in the seventh month of her pregnancy, having had eighteen leeches upon her temples, and forty ounces of blood taken

away—twenty from either arm; with her head in a state of distraction. Wanting, from ill health, the little strength of mind I have possessed in scenes of danger, I sometimes give way a little; but upon the whole, as you, my dear Otter, will see by this letter, I have *luff'd*, and kept up to the wind; as you always induced me to do by your own example.

"As to other matters, of my own affairs; they dwindle into such trifles, compared with the safety of my blessed wife and children, that I will say nothing of them. I have insured my life in the *Rock*. There's for you! Give my love to Mrs. ——, and to all your family. I hope things will take a better turn—but should they not, his "will be done," who gave me every comfort, and who may take them from me without one murmur on my part.

"Your sincere old friend,

"E. D. CLARKE."

"*November*, 1821.

"*My dear Sister*,—Of what possible use would it have been, in disclosing to you the bitter story of my distress: although great has been my manifold care, yet equally great has been the wish to conceal it from you. But now Death no longer flaps his bat-like wings against my face, I may tell you that I have narrowly escaped burying my beloved wife, now nearly approaching to her confinement, and three of my darling children. They were all attacked with dreadful fever, one after the other. It began in September, and has now left them like so many walking skeletons. My dear Angelica, with her head shaved, and blisters on her back, having lost

forty ounces of blood from her arms. You may suppose what my sufferings have been; nor will you wonder that I am now the worst of the bunch. I managed nursing our blessed babes, and their angelic mother; but now that is over, I seem like a water-logged ship, going down bodily. I cannot bear the least noise; my head swims—my loins ache, and my whole frame is in a state of disorder. But my sufferings are trifling, compared to that which my dear wife and children have suffered. The blessing of their recovery makes me think all other evils *nothing*. Guess my agitation, when one evening, my poor servants entered the room where I was, saying, they "thought I ought to have some friend staying with me." And when I asked the reason, they answered, that "they feared I was deceived by the doctors, as they perceived the dear children were drawing off!" DRAWING OFF! Fortunately I had no great faith in their prognostics, well knowing that old nurses first get frightened themselves, and then endeavour to frighten every body around them. The symptoms were indeed dreadfully alarming; but they subsided, and my heart revived.

"Fifteen years have passed, in which we wanted not even an apothecary. My chubby brats were the talk of the whole place, for health; but then this fever. What a change! I had been to London, to Sir Astley Cooper, about my polypus, when all this fell sweep upon me. Beaumorice, Walpole, and Augusta failed. Horace, who was with me, in the midst of it, did not catch the fever: Edward and Paget were luckily at school. Good bye! Love to my dear nieces, and kind remembrances to Captain Parkinson.

"Your affectionate brother,

"E. D. CLARKE."

"*My dear Sister,*—Angelica is safe in bed, with a chubby, black-eyed girl, as fat as a mole! You can have no idea what she has gone through, after all her illness. My house is fairly beset, such is the interest excited among all ranks, for a mother under such circumstances.

"I have had a hard gale to contend with, my dearest Anne, this year; but I will not croak, now God has so blessed me. Rents and tithes not paid—enormous expenses—and my wife and children dying. Now they are safe, I care for nothing else. But I had well nigh sunk. My love to your dear children. Remember me most kindly to your valuable husband.

"Ever your affectionate but weather-beaten brother,

"E. D. CLARKE."

"*Cambridge, January* 22, 1822.

"*My dear Sister,*—I still continue very ill, which must explain to you the whole course of my silence. I received your nice long letter from 'Dent-de-Lion,' and hope Captain Parkinson is recovered. I went to Eton with my two sons, Edward and Paget,—a great undertaking for me, and *too great* in the present state of my health, being fit for nothing but to go to bed. Upon my arrival, I received a note from James, desiring to see me at Windsor Castle. I went up with my two boys, and should have gladly accepted his pressing invitation, and have staid with him a day, but I could not. I set off from Windsor almost immediately, and from Eton also the next morning, to avoid invitations and botherations. I am now again in my own nest, with my dear brats all bawling, and their angelic mother, whom, alas! Anne, you are destined not to know; for sick as I now am, I cannot go to Ramsgate. 'I cannot pass the

Alps,' said the old maid in Hayley's Tale. You once mentioned a specimen of natural history. Could I but recover my health, I would not be thus unmindful; but as I am, I can do nothing. I beg you to believe, however, that I have not forgotten your request. Adieu! my dear sister.

"E. D. CLARKE."

No. VI.

Such was the unfading nature of the playfulness and buoyancy of Dr. Clarke's mind, even to the latest period of his life, that no subject, however serious (excepting always that of religion), no degree of intensity in the pursuit, could prevent him from indulging occasionally in light and fanciful representations of it to his friends, and this under any form which either accident or the humour of the moment might suggest to him. Hence it happened that persons who did not know him well, and who regarded him chiefly through the medium of these ebullitions, were apt to form erroneous opinions of his acquirements.

The following Verses, which are of the character I have mentioned, are supposed to have been written about this period:—

HERMES, TRISMEGISTUS, AND CHORUS OF GNOMES.

HERMES.

December is the season,
When bitter blasts are blowing:
Invoke then rhyme and reason,
Where crucibles are glowing.

SYLPHS.

See the Chemists take their stand?
Each his forceps in his hand!
Now's the time, ye jolly fellows,
Briskly ply the double-bellows!

See the inward white heat gleams,
Brighter than Aurora's beams!
Now's the time for incandescence!
Now's the time for phosphorescence!
Now's the time for sublimation,
Bounces, bangs, and detonation,
Flames and fumes, and calcination!
All that gladdens expectation!
Thus while bleak December lasts,
Careless of its wintry blasts,
Edward Daniel, Holme, and *Lunn,*
Wage their *Trismegistine* fun;
Round about the cauldron go,
Sharing joys which Chemists know!

HERMES.

Let your metre now be sweeter,
Saccharine as song can be:
Bid the Chorus set before us,
All the glories Chemists see!

Chorus of Gnomes, accompanied with musical Hydrogen tubes.

Oh for the joys,
Of the Crucible Boys!
The joy of all joys is the Crucible Boys!
We burn up our cares
Like a bundle of tares,
While sorrow sinks down in the Crucible Boys!

This hullabaloo,
Politicians may rue,
And pedants pour over their pages:
The Chemist alone,
True wisdom has shewn,
Who deservedly ranks among sages.

CHORUS.

Then oh for the joys
Of the Crucible Boys, &c.

His Crucible tells,
By magical spells,
That all things around him rejoice;
For he hears the great truth,
Of "perpetual youth,"
Proclaimed by a chemical voice!

CHORUS.

Then oh for the joys
Of the Crucible Boys, &c.

Since "*life's then a jest,*"
And Death a mere test,
Where all men in Crucible lie;
Not a tear needs be shed,
For the Chemist when dead,
Who *to live* has been destin'd *to die!*

Chorus of Hermes, and all the Sylphs and Gnomes.

Then oh for the joys,
Of the Crucible Boys!
The joy of all joys is the Crucible Boys.

No. VII.

The Gas Blow-pipe, or Art of Fusion by Burning the Gaseous Constituents of Water: giving the History of the Philosophical Apparatus so denominated; the Proofs of Analogy in its Operations to the Nature of Volcanoes; together with an Appendix, containing an Account of Experiments with this Blow-pipe.

PREFACE.

THE Public is already in possession of the principal facts which have led to the history of the *Gas Blow-pipe.* The different claims made on the part of the Chemists of this Country and of *America,* as to the originality of the invention, have rendered it desirable to remove a few existing doubts, and to shew, by a summary memorial, the progressive steps by which the philosophical *apparatus,* here delineated and described, has reached its present state of utility. The following pages are not, however, so much calculated for a general perusal, as they are for the inspection of persons already versed in chemical pursuits, and well acquainted with those parts of the detail applicable to the *Gas Blow-pipe* and to the manner of using it, which might otherwise require explanation. To their candid examination this statement is particularly submitted; in the hope that a sincere desire 'to render to every one his due' will be found to have actuated the author in all that he has said upon the subject.

So far as the Sciences of *Chemistry* and *Mineralogy* are concerned, a greater degree of interest has seldom been excited than by the extraordinary instrument here denominated the *Gas Blow-pipe;* and it is conceived that this interest is not likely to suffer diminution by shewing that in its principles of action it bears a striking analogy to the nature of a *Volcano;* exercising at the same time a degree of power in its operations, which not only corresponds with the agency, but in some respects perhaps surpasses the energies of ÆTNA and VESUVIUS.

Cambridge,
January 19, 1819.

THE

GAS BLOW-PIPE.

Discoveries in Chemistry, as of Science in general, are often purely accidental. When they begin to excite notice, in consequence of their important results, Philosophers lay claim to them; either pretending to have anticipated the accidental occurrence by their own previous reasoning, or by maintaining that the circumstance of the discovery itself originated in some suggestion made by themselves or by their followers. This has been remarkably exemplified in the history of the *Gas Blow-pipe;** the origin of which, as far as relates to the burning of an explosive mixture of gases propelled through a common aperture and from a common reservoir, was entirely due to an accidental conversation held by the author with the maker of a blow-pipe invented for other purposes by Mr. *Brooke*.† The circumstances of this con-

* Called the *Oxy-Hydrogen* Blow-pipe, by Dr. *Thomson* and by other Chemists; meaning simply a blow-pipe in which the gaseous constituents of *water*, after undergoing compression in a mixed state, are propelled through a capillary tube, and exposed to combustion.

† The maker of this Blow-pipe was Mr. *Newman*, of *Lisle Street, Leicester Square;* in consequence of which it received the appellation of *Newman's Blow-pipe:* it was, however, invented by Mr. *Brooke*, as appears by his own account of it, in Dr. *Thomson's* "Annals of Philosophy" for *May*, 1816. See p. 367.

versation have been elsewhere detailed:* but if it should be asked how the maker of Mr. *Brooke's* blow-pipe became possessed of the information that the combustion of an explosive mixture might take place without explosion when propelled through a capillary tube, the answer is obvious; this fact was made known by the inquiry instituted respecting *gas* illumination: and it is notorious to the whole University of *Cambridge*, that the same truth, upon which the whole depends, was communicated by the late Professor *Tennant*, in his Public Lectures, so long ago as the *Spring* of the year 1814.† Yet so little reliance was placed upon this information when the proposition was made for burning a highly explosive mixture of *oxygen* and *hydrogen* gases, that one of the most eminent Chemists in *Europe* was decidedly against the measure:‡ and even upon a trial being made, in consequence of a consultation with Sir *Humphry Davy* upon the subject,§ the experiments were attended with so much danger, that the author, who persisted in making them, narrowly escaped being killed by the frequent bursting of his apparatus. It is evident, therefore, that something more was necessary than this infor-

* See Journal of the Royal Institution, III. 105. Art. xii.

† It was ascertained by the Professor and by Dr. *Wollaston*, during an investigation which took place as to the probability of explosion in gas reservoirs from a retrograde motion of the flame used for illumination: but the discovery is due to the original inventor of *gas-light*.

‡ "Sooner or later," said Dr. *Wollaston*, in one of his Letters to the author, "a retrograde movement of the flame will cause the apparatus to explode:" and this prediction was verified, when all thoughts of danger were laid aside; the experiments having continued without any accident for a quarter of a year.

§ The application proposing the use of this explosive mixture for Mr. *Brooke's* Blow-pipe was made to Sir *H. Davy*, by the author, in *May* 1816. Sir *Humphry's* answer, in which he stated that he had tried the experiment, arrived on July 8th, of the same year.

mation, as applied to one of Mr. *Brooke's* blow-pipes, in order to render the contrivance of any utility, either in Chemistry or in the Arts; namely, the *Safety Cylinder* afterwards invented and adapted to it by Professor *Cumming*,* without which the instrument itself is worse than useless. The author, reflecting upon the situation in which he was placed during his first experiments with this blow-pipe, when he was often surrounded by his friends and by the members of his family; especially when the explosions took place which he has before described;† has indeed reason to be thankful that both he and they were so providentially preserved: it becomes therefore a duty of gratitude to lay the greater stress upon that part of the invention to which, beyond all doubt, he is indebted for his present safety. Had it not been for this circumstance, it would have fallen to the lot of some other person to have written the history of the *Gas Blow-pipe*, and to have rendered it rather tragical than amusing.

The present observations relate to the *Gas Blow-pipe* as used for burning a compressed mixture of *hydrogen* and *oxygen* gases, when propelled from a common reservoir. The first usage of these gases, in a state of mixture, as it was stated

* Rev. *J. Cumming*, M. A. Fellow of *Trinity College, Cambridge*, now Professor of Chemistry in that University.

† See an account of one of the explosions of the *Gas Blow-pipe*, when the gaseous mixture was as highly compressed as possible, in Dr. *Thomson's* "Annals of Philosophy" for *November* 1816. Upon that occasion, Messrs. *Macfarlane* and *Amos*, both Fellows of *Trinity College, Cambridge*, together with a servant, were present with the author, and standing close to the apparatus at the time of the accident. The reservoir for the compression of the gases, made of thick *copper*, was torn in pieces; and the fragments flew, with the force of cannon-shot, in all directions, like the bursting of a bomb.

upon a former occasion,* was believed to have been made by an unknown native of *Germany;* who employed for this purpose a bladder to which a capillary tube was affixed. The author received this information, upon report, after he began to write the account of his own experiments; but no one has since laid claim to the experiment, nor does he now know whether there be any truth in the rumour. He has been, however, the more anxious to repeat it, because upon the truth of it depend all pretensions to priority of invention. Dr. *Thomas Thomson*, now Professor of Chemistry at *Glasgow*, made experiments with the mixed gases, at *Edinburgh*, seventeen years ago; but was induced to abandon the undertaking, owing to the accidents which happened to his apparatus.† With respect to the ayplication of *hydrogen* and *oxygen* gases to aid the operations of the blow-pipe, when propelled from *different* reservoirs through *different* apertures, by means of *hydrostatic* or other pressure, this contrivance is as old as the time of *Lavoisier*. The *American* Chemists lay claim to it, as their invention, in consequence of experiments made, in 1802, by Mr. *Robert Hare*, junior, Professor of Natural Philosophy in *Philadelphia;* of which an account appeared in Dr. *Bruce's* Mineralogical Journal,‡ and also in the *Annales de Chimie*.§ Much about the same time, Dr. *Thomson* also carried on a series of experiments in the same way;¶ and we have witnessed similar experiments, for at least a dozen years, during the Chemical

* See Journal of the Royal Institution, III. p. 105. (Note.)

† Of this, Dr. *Thomson* himself informed the author, in a Letter dated *April* 9, 1817.

‡ Vol. I. No. 2. p. 97. (Note.)

§ See tom. xlv. p. 113. "*Mémoire sur l'usage du Chalumeau, et les moyens de l'alimenter d'Air*," &c.

¶ This is also stated in the Letter above mentioned.

Lectures delivered in the University of *Cambridge*. The combustion of the *diamond* was always thus exhibited: and in *America* this plan is still pursued; that is to say, the two gases are propelled from different reservoirs, and through different apertures.* But the intensity of the heat is incomparably greater when the *gases*, after compression, are propelled and burned in a *mixed* state; because the due proportion necessary for forming *water* is then constantly and equally maintained: whereas an excess, either on the side of the *hydrogen* or of the *oxygen*, not only tends to diminish the temperature, but if it be much increased on the side of the *oxygen*, infallibly extinguishes the flame.

As this method of aiding the operations of the *Blow-pipe* differs, in this essential particular, from every other hitherto employed, it is that to which (with all the improvements since made for insuring the safety of the operator) the name of THE GAS BLOW-PIPE is now applied, and whose history it is the author's present purpose to relate. And this induces a second part of the inquiry; namely, what first suggested the propriety of mixing the two gases in the relative proportion for forming *water?* because upon the observance of this proportion the intensity of the heat mainly depends.†

* Mr. *John Griscom*, Professor of Chemistry at *New York*, who visited *Cambridge* so lately as *January* 9, of the present year 1819, and examined the author's method of using the *Gas Blow-pipe*, recommended the plan of different reservoirs, as that which he had adopted for his own Lectures, and which he deemed preferable, on account of its safety.

† At the same time it should be stated, as a curious fact, that pure *hydrogen* gas, when highly compressed, and propelled through a capillary tube, exhibits, during combustion, a very exalted temperature. The author has succeeded in fusing *Platinum* foil by means of this *gas:* and the combustion of *iron* wire, by burning pure *hydrogen gas* in this manner, is an experiment always attended with success.

This circumstance was briefly stated in the first account which the author published of his experiments with the *Gas Blow-pipe;** but the phænomena upon which it was founded, highly interesting as they are, do not seem to have met with that attention from scientific men to which they are entitled; probably owing to the very short time usually bestowed by scientific travellers amidst the scenes where such phænomena are fearfully displayed. The author alludes to the phænomena attendant upon volcanoes; the decomposition of *water* by *volcanic fire;* the compression to which the *gaseous result* is liable; its subsequent *combustion;* the power of *fusion* it exhibits; and, lastly, the horrible explosions which take place, whenever the whole of the compressed gas is exposed to combustion. If this happen, whole mountains, as it is well known, are blown into the air by the tremendous violence of the explosion, which is heard to the distance of many leagues, and the eruption ceases. But the minor explosions, or detonations, taking place at the mouths of narrow apertures in a volcano whence liquid rocks are ejected in the form of *lava,* are such as to resemble the loudest artillery. In these cases, a partial explosion of the gaseous mixture takes place; exactly corresponding with the detonations which, upon a small scale, are heard at the orifice of the jet of the *Gas Blow-pipe;* and bearing about the same comparison to the explosion of the *gas* reservoir, which the detonations at the mouth of a stream of *lava* do to the explosion of all the pent *gas* within the volcano. The Mountain VESUVIUS, perhaps better than any other volcano, may serve to illustrate what has been here advanced; because it is better adapted for examination than ÆTNA, or any other volcano where the *crater* is remote from the *syringes* or *jets* through which the *lava* is

* Journal of the Royal Institution, III. p. 104.

propelled. VESUVIUS, so to speak, is, as to its chemical nature, in all respects a vast *Gas Blow-pipe;* corresponding, in all its phænomena, with the appearances and effects, the explosions and detonations, the heat and the light,* exhibited by the apparatus which bears this name; and differing from it only as the mighty operations of Nature in the universe differ from the puny imitations of the chemist in his laboratory. During twelve years that the author has delivered Public Lectures in the University of *Cambridge,* as it is well known to persons who have attended those Lectures, he has constantly thus explained the nature and effects of volcanic eruptions. Without the agency of *water* and its decomposition, these eruptions do not take place. Before any great eruption of VESUVIUS, not only does the water disappear in all the wells of *Naples, Portici, Resina,* and other towns at the foot of the mountain, but even the sea retires; and marine animals, abandoned by their native element, expire upon the shore. When the eruption took place which originated a new mountain three miles in circumference, near to the antient *Puteoli,* now *Puzzuoli,* the whole of the *Lucrine* Lake became dry.† If the

* There is no other way in which any idea can be given of the intense light beaming from the source of a stream of perfectly liquid *lava,* than by attending to the fusion of the most refractory substances before the *Gas Blow-pipe,* which exhibits an emanation of the same kind of light, comparatively, as the light of a *star* to that of the *sun.*

† Sir *W. Hamilton* was inclined to doubt this circumstance; perhaps not being aware of its being so usual a prelude to volcanic eruption. "It is commonly imagined," says he, "that the *new mountain* rose out of the *Lucrine* Lake, which was destroyed by it: but in the account *(of the eruption)*, no mention is made of the *Lucrine* Lake:" he therefore proceeds to account for its disappearance by conjecture. —*See* Sir W. HAMILTON'S *Observations on Mount Vesuvius,* &c. p. 146. *Lond.* 1772.

water be converted only into steam, eruptions take place in which steam, and boiling water, and mud, are ejected together. Of this nature are the eruptions described by *Pallas*, as having happened, under his inspection, upon the *Cimmerian Bosporus*, or *Straits of Taman*. But if, under all the circumstances of more exalted temperature and of the changes induced by chemical affinities,* WATER be decomposed, and its *gaseous constituents* exposed to *combustion*, the consequences will obviously be similar to those which VESUVIUS has often exhibited, and to which the author was, during two years, almost uninterruptedly, an eye-witness. The two subjects are so intimately allied, that he may be excused for relating one instance out of many others, when he had an opportunity of verifying what he has now stated. In *February* of the year 1793, during frequent eruptions of Mount VESUVIUS, Sir *William Hamilton* expressed a wish to have one point ascertained, of which he had not been able to procure accurate information; *i. e.* "whether the torrents of *lava*, at their sources, exhibited the substances of which *lava* is composed in a state of *perfect* or *imperfect* fusion." The late Lord *Palmerstone*, with many other of the *English* Nobility, and the present Sir *Charles Blagden*, were then in *Naples*, actuated by the same curiosity. It happened that a stream of *lava* broke out near to the *crater*; and when this is the case, the quantity of ejected matter being smaller, the danger of approaching the source of the torrent is thereby diminished. In this case, the only peril to be apprehended was from the *crater* itself; but the author, watching a favourable opportunity (when a strong wind carried the matter expelled from the *crater* towards a different side of the mountain from that

* Such as those which result from the action of *water* on the *metals* of the *earths*, as ingeniously supposed by Sir *H. Davy*.

whence the *lava* issued), left *Naples*, in company with three other Gentlemen,* upon this expedition. They were accompanied by the late Lord and Lady *Palmerstone*, first to the *Hermitage*, and afterwards as far as what was called the *second crater* of the mountain; after which they proceeded up the cone of *Vesuvius*, and found the *crater*, at the summit, in a very active state, throwing out volleys of immense stones translucid with vitrification, and such heavy showers of ashes, involved in dense sulphureous clouds, as to render any approach to it extremely dangerous. The party ascended, however, as near to the summit as possible; then crossing over to the side whence the *lava* was issuing, they reached the bed of the torrent, and attempted to ascend, by the side of it, to its source. This they soon found to be impossible, owing to an unfortunate change of wind; in consequence of which all the smoke of the *lava* came hot upon them, accompanied at the same time with so thick a mist of minute ashes from the *crater*, and such suffocating fumes of sulphur, that they knew not what course to steer. In this perplexity, the author called to mind an expedient recommended by Sir *Wm. Hamilton* upon a former occasion, and proposed crossing immediately the current of the flowing *lava*, with a view to gain its windward side. All his companions were against the measure, owing to the very liquid appearance the *lava* then had, so near to its source: but while they stood deliberating what was to be done, immense fragments of rocks that had been ejected from the *crater*, and huge *volcanic bombs*† which the smoke had pre-

* The Hon. *Henry Tufton*, brother of the present Earl of *Thanet*; the Hon. Mr. afterwards Lord *Douglas*; and Colonel *Shutz*, of the Guards.

† These curious volcanic products are very common at *Naples*, although rarely seen in this country among the different substances

vented their observing, fell thick among them: vast masses of *slag* and of other matter, rolling upon their edges, like enormous wheels, passed by them with a force and velocity sufficient to crush every one of the party to atoms, if directed to the spot where they all stood huddled together. There was not a moment to be lost: the author, therefore, covering his face with his hat, descended the high bank beneath which the lava ran, and, rushing upon the surface of the melted matter, reached the opposite side, having only his boots burned, and his hands somewhat scorched. Here he saw clearly the whole of the danger to which his friends were exposed: the noise was such as almost to prevent his being heard; but he endeavoured, by calling and by gestures, to persuade them to follow. Vast rocks of indurated *lava*, from the *crater*, were bounding by them, and others falling that would have overwhelmed a citadel. Not one of the party would stir; not even the guides

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exhibited in Collections as being brought from *Vesuvius*. The *Neapolitans* call them "*Vesuvian bombs*," "*Vesuvian drops*," and "*Vesuvian tears*:" they vary in magnitude, from the size of a sparrow's egg to the bigness of a cocoa-nut, and sometimes they are a great deal larger. The author found several of them weighing from fifty to sixty pounds. They have the form which matter in the most perfect state of fusion assumes by cooling in its passage through atmospheric air, and becoming hard before it reaches the ground. Falling in beds of the *Vesuvian* ashes, the mass remains unbroken, and the entire form is thus often preserved. It is pear-like; although in some instances more inclining to the form of an oblate spheroïd. The surface is rough, and rather porous: when broken, the interior is very compact; but there is generally a piece of more porous *lava*, as a nucleus, towards the centre. These *drops* descend from the clouds accumulated over the cone of *Vesuvius*, during its most violent eruptions. It is to be remarked, that *Ferber*, in his *Catalogue Raisonné* of the *Vesuvian* productions, does not mention these *bombs*.

accustomed for hire to conduct persons over the mountain. At last, he had the satisfaction to see them descend, and endeavour to cross the torrent somewhat lower down; where the lava, from its redness, appeared to be less liquid; and where the stream was narrower. In fact, the narrowness of the stream deceived them: the current had divided into two branches; in the midst of which was an island, if such it might be called, surrounded by liquid fire. They crossed over the first stream in safety; but being a good deal scorched upon the island, they attempted the passage of the second branch; in doing which, one of the guides, laden with torches and other things, fell down, and was terribly burned.

Being now all on the windward side, they continued their ascent; the bellowings, belchings, and explosions as of cannon, evidently not from the *crater* (which sent forth one uniform roaring and deafening noise), convinced them they were now not far from the source. The *lava* appeared whiter and whiter as they advanced, owing to its intense heat; and in about half an hour they reached the chasm through which the melted matter had opened itself a passage. It was a narrow fissure in the solid *lava* of the cone. The sides, smooth, compact, and destitute of that porous appearance which the superficies of *lava* exhibits when it has cooled under exposure to atmospheric air, resembled the most solid *trap*, or *basalt*. To describe the rest of the spectacle here displayed, is utterly beyond all human ability: the author can only appeal to those who participated the astonishment he felt upon that occasion, and to the sensations which they experienced in common with him, the remembrance of which can only be obliterated with their lives. All he had previously seen of volcanic phænomena had not prepared him for what he then beheld. He had often witnessed the rivers of *lava*, after their descent into the valley

between *Somma* and *Vesuvius;* they resembled moving heaps of scoriæ falling over one another with a rattling noise, which, in their further progress, carried ruin and devastation into the plains: but from the centre of this arched chasm, and along a channel cut finer than art can imitate, beamed the most intense light, radiating with such ineffable lustre, that the eye could only contemplate it for an instant, and by successive glances: while, issuing with the velocity of a flood, and accompanied with a rushing wind, this light itself, in milder splendour, seemed to melt away into a translucent and vivid stream, exhibiting matter *in the most perfect fusion*, running, like liquid silver, down the side of the mountain. In its progress downwards, and as soon as the air began to act upon it, the superficies lost its whiteness; becoming first red, and afterward of a darker hue, until, lower down, black scoriæ began to form upon its surface. Above the arched chasm there was a small natural chimney, about four feet in height, throwing up, occasionally, stones, attended with detonations. The author approached near enough to this aperture to gather from the lips of it some incrustations of pure *sulphur*:* the fumes

* Many of the *yellow* and *orange-coloured salts* of *Vesuvius* have been confounded with *sulphur*, in descriptions given of this volcano. The author once visited the *crater* after a violent eruption, and found the whole of the interior of that immense bason lined with *saline deposits*, exhibiting the most vivid and brilliant hues of the rainbow. The late Lord *Palmerstone*, who accompanied him, also witnessed this singular appearance. It is a rare occurrence; the eruptions from the *crater* being seldom characterized by any such phænomenon. As these *salts* are deliquescent, they soon disappear; either in consequence of the action of atmospheric air, or of steam from the volcano. Some which the author procured within the *crater*, of a bright *sulphur yellow*, assumed an *orange* colour after deliquescence. They were analyzed by *H. Warburton*, Esq. of *Trinity College, Cambridge*, and proved to

of which were so suffocating, that it was with difficulty, and only at intervals, a sight could be obtained of what was passing below. It was evident, however, that the current of *lava*, with the same indescribable splendour, was flowing rapidly at the bottom of this chimney, towards the mouth of this chasm: and had it not been for this vent, it is probable the party now mentioned could never have been able to approach so nearly as they had done to the source of the *lava*. The eruptions from the *crater* increased with such violence, that it was necessary to use all possible expedition in making the remaining observations.

Sir *Wm. Hamilton* entertained a notion, that large stones cast upon a current of *lava* would make no impression; inasmuch as it was always found to resist the weight of the human body at a certain distance from its source. Fatal indeed would have been the attempt to venture upon the *lava*, anywhere near this spot. It is true that light bodies made little or no impression, even at the source :* stones of five, ten, or fifteen pounds in weight hardly sunk at all; but bodies of sixty, seventy, or eighty pounds, when cast in, were seen to

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be *muriates of iron;* but with such an excess of *acid*, that, at the time of putting them into bottles with glass-stoppers, within the *crater*, leather gloves were instantly consumed, upon coming into contact with them.

* While the author was employed in making these remarks, some of the party amused themselves in placing raw beef-steaks upon the smooth surface of the *lava;* having seen the workmen in the *Cornish* smelting-houses do the same upon the melted *tin*, and being provided with meat and poles for the purpose. Much after the same manner as upon the metal in fusion, the steak sometimes disappeared instantaneously; but if it could be recovered almost in the moment when it came in contact with the *lava*, it proved exceedingly well flavoured.

form a kind of bed in the melted matter, and so float away with it. A stone of about three hundred pounds in weight had been thrown out from the *crater* of the mountain, and remained near the source of the *lava:* this was raised, by the party present, upon one end; and rolled from the side of the channel, so as to fall into the melted matter, which was so liquid, that the stone gradually sank beneath the surface, and disappeared; becoming slowly invested with the substance in fusion, and then subsiding to the bottom. To the eye, indeed, notwithstanding its glutinous appearance, the *lava* seemed as if it might be stirred, like honey or molasses; and with a bar of iron properly bent for the purpose at the point, some of it might have been caught up, which, when being acted upon by the air, would instantly have been converted into a porous cinder or slag. When *lava* cools without being acted upon by the air, it is never porous, but becomes a solid and very compact body. Of this the proofs are numerous; the surface of the *lava* consisting always, when cooled, of scoria, and the inferior stratum of a compact stone. But a short time had elapsed after making this experiment, when a mass of matter, in perfect fusion, was ejected from the *crater,* to a considerable height in the air; whence descending upon the cone, it fell so near to the spot where the party now stood, that, running towards it, they found it flattened out and splashed into fragments which were more than red-hot. One of these pieces, being kicked before them, in their descent from the source of the *lava,* until it became cool, was brought away, and proved to be a mass of scoria, exactly resembling the substance which covers a stream of *lava* when it has descended to any distance from its source; at which time the whole current, as it is impelled by the melted matter below, moving slowly onward, resembles nothing more than a rolling heap of cinders from an iron-foundry.

The eruptions from the *crater* were now without intermission: and the danger of remaining any longer near this place was alarmingly conspicuous. A huge mass, cast to an immense height in the air, seemed to be falling in a direction so fatally perpendicular, that there was not one of the party present who did not expect to be crushed by it: fortunately, it fell beyond the spot on which they stood, where it was shattered into a thousand pieces; and these, rolling onwards, were carried, with great velocity, far into the valley below. Not more than five minutes had elapsed after this accident, when the whole surface of the cone of *Vesuvius* near the source of the *lava*, which the party had rapidly quitted, was entirely covered by a shower of stones from the *crater*. The object of their undertaking had been, however, satisfactorily accomplished: it had been fully ascertained, not only that the *lava* issued from its source in a state of *perfect fusion*, but that this *fusion* was due to that exalted temperature which an explosive *gaseous mixture*, after the utmost compression, exhibits during its combustion. That this *gaseous mixture* results from the decomposition of *water*, is also evident; consequently, to imitate the power of fusion exhibited by a *volcano*, nothing more was necessary than to burn the gaseous constituents of *water* under similar circumstances: but here was the difficulty. Every clap of thunder in the atmosphere is sufficient to prove what the consequences are, where the gaseous constituents of *water*, when in a mixed state, become ignited, even by an electric spark: and who would venture to communicate flame to such a mixture, under compression, for purposes of experiment? The experiments which took place under *Lavoisier* at *Paris*, and all over *Europe*, for the composition of *water*, were an approximation towards it; because these experiments first proved that the gaseous constituents of water might be used to aid the operations of the blow-pipe. It was then, in

fact, first made known, that the two *gases*, when burned separately, and propelled from different reservoirs, through different apertures, by hydrostatic pressure, towards one point (which was the method afterwards pursued by Professor *Hare*, in *America*), exhibited a degree of temperature capable of effecting THE COMBUSTION OF THE DIAMOND! Therefore, if it be requisite to trace the invention of the *Gas Blow-pipe* to the first principles which led to the whole of the contrivance, it is to these discoveries of *Lavoisier* that reference should be made. As soon as the invention of Mr. *Brooke's* Blow-pipe offered an easy method of compressing and propelling one of the gaseous constituents of *water*, while the other might be afforded by the combustion of a spirit-lamp, the author, of course, as he has before acknowledged,* availed himself of this apparatus; but finding, as he before said, that the heat was not sufficient for his purpose, "because the *hydrogen* was not afforded in its due proportion,"† he was directed, by the maker of the Blow-pipe, to compress the *mixed gases*, and burn them, upon the principle of *gas* illumination, when propelled through a capillary tube. As to the relative proportion between the two *gases*, after all that he now has stated, and during twelve years has constantly repeated, upon the subject of Volcanoes, at his Public Lectures before the University of *Cambridge*,—is it necessary to ask, whether he would hesitate to mix them in the proportion for forming WATER? That he did not hesitate, is evident; because in the very beginning of the earliest account which he published of his experiments with the *Gas Blow-pipe*,‡ and in the very first words of it, he mentions "*water* as the combustible for increasing the action of *fire*:"—and in a page almost imme-

* Journal of the Royal Institution, III. 105.

† Ibid. Ibid. 104.

diately following,* he states the relative proportion between the two *gases* which he had adopted; namely, "two parts, by bulk, of *hydrogen*, and one part of *oxygen*." If, in any publication anterior to the article here cited, it can be made to appear that the same proportion had been adopted by any other person, he foregoes, of course, all claim to this part of the improvement in the mode of using the *Gas Blow-pipe*.

Here, then, may terminate the detail of circumstances connected with the history of this valuable apparatus for *Chemistry* and *Mineralogy*. The few remaining pages of this publication will be appropriated to observations calculated to interest those who have attended to the narrative of the author's former experiments; because, in their frequent repetition, some new facts have been made known to him, some mistaken notions corrected, and some doubtful points confirmed.

Among the new facts which the use of this *Blow-pipe* has made known to the author, there is one of a nature so extraordinary, that its explanation will baffle the utmost research of Chemical Science, in its present boasted state of advancement:—it is this; that refractory bodies fused in a *charcoal* crucible, or suffered to fall, in a state of fusion, upon a piece of dry wood, become coated with the highest degree of *metallic* lustre which a metal is capable of exhibiting: yet this *metallic* lustre is so far *pseudo-metallic*, that it disappears upon the action of a file, being merely a superficial filmy investment of the substance fused. One of the most eminent Chemists in *Europe*, in a Letter to the author, calls this appearance "infinitely more deceptive than any thing of the kind he had before seen." A specimen of *silica* which had been fused upon *charcoal*, and afterwards exhibited this *pseudo-metallic* lustre, was sent to Dr. *Bostock*, then one of the Editors of the "Annals of

* Journal of the Royal Institution, III. 107.

Philosophy," who ascribed it rather to *vitrification*, than to the revival of a *metallic* body. And Dr. *Thomson*, also Editor of the same work, received from a correspondent at *Lewes* in *Sussex*, specimens with this *pseudo-metallic* appearance.* Where the results are of sufficient magnitude, being guided by an axiom respecting true *metallic* lustre which is mentioned by Dr. *Thomson* in his chapter on simple combustibles," the test of the file immediately discloses the real nature of the appearance:† but in cases where the most minute globules, hardly visible but with the aid of a lens, remain as the result of an experiment upon a *charcoal* surface, the truth cannot be so easily determined. Hence the author, in his own endeavours to revive *metals* before the *Gas Blow-pipe* upon *charcoal*, may have been deceived by such appearances; especially in cases where the seeming *metallic* lustre remained permanent. Every experiment of this nature demands a careful repetition with the most judicious caution.

Another new fact, for which we are indebted to the *Gas Blow-pipe*, is, that *wood-tin*, after fusion, *per se*, exhibits *metallic* lustre‡ upon the action of the file, without any revival

* See an Account of the action of the *Gas Blow-pipe* upon *Silica*, by *Joshua Mantell*, Esq. "Annals of Philosophy, for *April*, 1818," p. 310. Also Dr. *Thomson's* observations upon the same subject.

† System of Chemistry, vol. I. p. 313. *Lond.* 1817.

‡ Dr. *Thomson*, who examined it, says "it acquires a colour nearly similar to that of *plumbago*, with a very strong *metallic* lustre." (See *Annals of Philosophy for July*, 1817. p. 70.) Dr. *Thomson* also adds, that "this circumstance of *wood-tin* acquiring a *metallic* lustre, when fused, seems to decide a subject which has been agitated in this country with much keenness. It was asserted by Dr. *Hutton*, and is still maintained by his followers, that all *granite* has been in a state of igneous fusion. From Dr. *Clarke's* experiment, it may be inferred, with considerable confidence, that the *granite* in which the ores of *tin* occur has never been in a state of fusion."—*System of Chemistry*, p. 71.

of the *metal;* the *tin* still remaining in the state of an *oxide:* thereby contradicting at once the axiom before mentioned, and upon which a reliance has so long been placed; namely, that "no substance exhibits a *pseudo-metallic* lustre to the action of the file." In this instance, the degree of density which was hitherto considered as the peculiar characteristic of *metallic* bodies, enabling them to reflect so great a portion of light from their surfaces after being scraped or cut, is possessed by a body which is known not to be in the *metallic* state. Hence another conclusion may be deduced; *i. e.* that, independently of other tests, the action of the file cannot be relied upon as a criterion of the *metallic* nature of any substance.

Another new fact may also be mentioned here, although it has been already alluded to in a note to one of the preceding pages: namely, that *metals,* and among them even *platinum,* undergo complete combustion in the flame of pure *hydrogen gas.*

It has been doubted whether *platinum,* when it exhibits what has been called "*combustion*" before the *Gas Blow-pipe* really enters into any combination with *oxygen.* Some have thought that the dispersing results, during this supposed "*combustion,*" are either impurities, or minute globular particles of the pure *metal* which have been driven off by the vehemence of the ebullition before the flame of the burning gaseous mixture. There is an experiment which seems to prove the contrary; but it requires caution under other hands; and therefore no other reliance will be placed upon it here, than is necessary to call the attention of Chemists towards its repetition. If, during the supposed "*combustion*" of *platinum,* a sheet of glass or of white paper be held below it, in such a position as not to intercept or enter into contact with the

drops of *metal*, exceedingly minute *black* particles may be observed to fall upon it, like specks of *carbon*; but which there is this reason for believing to be the *black protoxide* of *platinum*; that if carefully collected and dissolved in *nitro-muriatic* acid, and the acid with gentle heat evaporated, and a drop of distilled water added, and afterwards touched with a glass rod dipped in *muriate of tin*, an orange-coloured precipitate will be visible. The author has exhibited this experiment, in the presence of his chemical friends: but as it is difficult, owing to the interruption caused by the falling of the melted *metal* upon the recipient, and also from the uncertainty of collecting a sufficient quantity of the *black particles*, so, of course, it is liable to failure.

Other results, respecting which doubts have been entertained by some of the Chemists of *London*, will be confirmed whenever the *Gas Blow-pipe* shall be so conducted in the metropolis as to afford the same intensity of heat which has afforded the results obtained in the University of *Cambridge*. That this has never been the case, hitherto, is evident from all the accounts published of the experiments with this blow-pipe in *London*. The fusion of *magnesia* could not be accomplished at the *Royal Institution*, (when the Archduke *Michael*, brother of the present Emperor of *Russia*, attended to witness the experiments,) until the action of the flame of the compressed gases had been combined with the agency of their powerful *galvanic* battery. Earl *Spencer*, who was present upon that occasion, and who informed the author of the manner in which the experiment was conducted, was also present in *Cambridge* when the same substance underwent fusion before the flame, simply, of the *Gas Blow-pipe*, without any other aid whatsoever. The danger of experiments with the *Gas Blow-pipe*, increasing in proportion to the extension of

the diameter of the jet, will always be a bar to any full display of its powers, so long as Chemists continue to use the instrument without the *Apparatus* necessary for securing the safety of the operator; and it is solely to a want of attention to such precautions that persons have been unable to obtain satisfactory results. Thus the decomposition of the *barytic* and *strontian* earths has not once been accomplished in *London*; although the fact of their decomposition at *Cambridge* be now no longer disputed.* The main cause of the failure with *barytes* in the metropolis has however been owing also to another cause; namely, that the trials have been very frequently conducted with a *hydrate*, instead of the pure earth. From causes, which the author cannot explain, it is become exceedingly difficult to obtain this earth in the proper state for exhibiting the revival of its *metallic* base. It has been, however, so often exhibited to Chemists who have visited *Cambridge* for the purpose, that all doubt being removed from their minds as to its *metallic* nature, they have ventured to explain the presence of the *metal* in another way. Of this an instance is mentioned in a Letter to the author from Dr. *Thomson*, dated *July* 4, 1817. It contains the following remark: "Dr. *Paris*, whom I have seen since his return from *Cambridge*, is of opinion that the *metallic* coating covering all the substances exposed to the action of your blow-pipe is derived from the *iron* held in solution by the *hydrogen* gas, which he says you prepare from *iron*. Prepare a little from *zinc*, and try whether you obtain the same results." The *gas*, in fact, had been as often prepared from *zinc* as from *iron*; therefore the observation of Dr. *Paris* tended to confirm the

* Dr. *Thomson*, who examined the *metal* of *barytes*, as obtained by means of the *Gas Blow-pipe*, has described it in the last edition of Chemistry.

success of the experiment, because it so decidedly admitted the revival of the *metal*, by offering his testimony as to its presence. But some remarks upon this observation of Dr. *Paris* were made by a Chemist of the University,* at the time, which will not here be out of place: they are transcribed literally from the Paper which this gentleman communicated to the author upon the subject. He states,

1. "That the most minute portions of *iron*, as of *zinc*, may be detected by re-agents; but that the fused *barytes* yielded no traces of the presence of either of them."

2. "That if the *metallic* lustre were due to *iron* or *zinc*, it would be permanent, and not so fugitive as scarcely to admit of a minute's examination; which is the case."

3. "That the combustion of *iron*, when exposed to the burning gaseous mixture, is so instantaneous and perfect, as to leave no possibility of a 'film' of *iron* remaining upon the fused substance; and the same remark applies still more strongly to *zinc*."

Another of the most beautiful experiments with the *Gas Blow-pipe* in *Cambridge*, but which has not been repeated with equal success in *Great Britain*, is that of the *combustion and volatilization of gold*, and the deposition of its *oxide* upon pipe-clay; exhibiting the most lively rose colour. This experiment was described in a work before cited:† and as the success or failure of it entirely depends upon the degree of temperature to which the *metal* is exposed, so it is proper to state that it requires the utmost intensity of heat which the flame of the *Gas Blow-pipe* has hitherto exhibited. Something of the same nature had been effected by Foreign Chemists; but the results were less conspicuous, and doubts were

* *Francis Lunn*, Esq. of *St. John's* College, *Cambridge*.

† Journal of the Royal Institution, III. p. 114.

always entertained respecting them. *Homberg* observed that *gold*, when placed in the focus of *Tschirnhaus's* burning-glass, was partly converted into a *purple* oxide; and the truth of his observations was confirmed by *Macquer*, using the very same instrument.* By means of *electricity*, and by the action of the *galvanic battery*, the *combustion* of *gold* has also been effected; and it is almost superfluous to add, that in all cases of *combustion* the *metal* is made to combine with *oxygen*:† but the beautiful result here alluded to, and which seems to be intermediate between the *protoxide* and the *peroxide*,‡ had not, in any former instance, been successfully obtained.

Some curious experiments have also been made respecting the *specific gravity* of *gold* when alloyed with *platinum*, and the colour of the former as affected by the presence of the latter. When pure *gold* is combined with *platinum* in the proportion of 84 of the *gold* to $8\frac{75}{100}$ of *platinum*, the colour of the *gold* is not altered; but the *specific gravity* of this alloy equals that of the purest *platinum*.

Another application of the *Gas Blow-pipe*, which may greatly enhance its value in the eyes of Chemists, is, that of using it as a means of detecting the colours of the *oxides* of metals, in cases where those oxides have not yet been otherwise chemically obtained and examined; serving as a guide to the Chemist, in his researches after those bodies. Thus, for

* See Dr. *Thomson's* Chemistry, vol. I. p. 484. *Lond.* 1817. Also "*Dictionnaire de Chimie*," II. 148.

† A most remarkable fact is however stated by Dr. *Thomson* (*ibid.* p. 485.), who says, that when *Van Marum* made electric sparks from the powerful *Teylerian* machine pass through a *gold* wire, suspended in *hydrogen gas*, and other *gases* not considered as being capable of supporting *combustion*, the combustion of the *gold* was effected.

‡ An intermediate oxide was supposed by *Berzelius* to exist, and to constitute a component part of the *purple* of CASSIUS. *Ibid.* p. 487.

example, by experiments made with the *Gas Blow-pipe*, we learn that one, at least, of the oxides of *calcium* has a *purple* hue;* and that the same may be said of *magnesium* and of *strontium*.† The *oxide* formed by the *combustion* of the *metallic base* of *barytes* is remarkably distinguished from either of the preceding *oxides*, by its *chrysolite green* colour.‡ To mention other results were only to recapitulate the accounts which the author has elsewhere already published.

A few words respecting the mode of using Professor *Cumming's* valuable addition to the *Gas Blow-pipe;* namely, the *Pneumatic* or *Safety-Cylinder;* will now conclude all that the author wishes to add upon the subject of the *Apparatus*. This part of the *Apparatus* is represented as a *Vignette* to the Preface. In the *Frontispiece*,§ its situation is pointed out immediately under *fig.* 5, where the top of it, containing *wire gauze*, appears; and where one extremity of the tube of the *jet* (see 5, 6.) is screwed into it. In the *Vignette* to the Preface, the *safety-cylinder* is seen as when it is taken out of the reservoir. A. shews the cap containing the *wire gauze;* B. the *stop-cock;* C. the mouth of the *jet;* C. D. the length and volume of the flame; E. the interior of the cylinder, shewing the height to which the *oil* ought to rise, when poured into it; F. a valve, at the bottom of the *cylinder*, communicating with the *gas reservoir* in which the *mixed gases* undergo compression; *x. y.* a *wire gauze* over the valve F. Whenever the flame C. D. has a retrograde motion towards A. a pretty smart detonation will be heard by the operator, owing to the explosion of the *gas* within the chamber E. It will

* Journal of the Royal Institution, III. p. 108.

† Ibid. p. 109. ‡ Ibid. p. 120.

§ For the *Frontispiece* and *Vignette*, referred to above, see the original edition of the "Gas Blow-pipe."

then be necessary for him, first to close the stop-cock B.; and afterwards, by opening it, and applying his ear to the *apparatus*, to ascertain, by the bubbling of the *oil*, whether this fluid be still within the cylinder; because, in violent detonations, it is sometimes forced through the valve F. into the *reservoir;* in which case, there is always a probability that the next retrograde movement of the flame will cause an explosion of all the *gas* within the *reservoir*, and burst the main chamber of the *Blow-pipe*. But even in this case the operator will be protected from all chance of danger to himself, by means of the Screen represented in the *Frontispiece;* as the author has proved in more than one instance, when, owing to his persisting in his experiments after the *oil* had been expelled, accidents of this kind ensued. When the *safety-cylinder* was first adapted to the GAS BLOW-PIPE, *water* was used instead of *oil*, to interrupt the communication between the chamber E. and the main reservoir of the *gaseous mixture;* and there are Chemists, in *London*, who continue to make use of *water* for this purpose; maintaining, that the ebullition of *oil* is less distinctly audible, and that "it tends to diminish the intensity of the flame." But *oil* is greatly to be preferred: and it may be considered as a certainty, that if the intensity of the flame be really diminished, it is due to other causes; either to some obstruction in the tube or mouth of the *jet*, owing to its not being properly cleansed after each operation;* or to

* Not only the tube of the *jet*, but also the chamber of the *safety-cylinder*, and of the *reservoir*, if necessary, should be carefully cleansed where *oil* has been used, because it corrodes the *copper*. The tube for the *jet*, at the least, ought to be $\frac{1}{60}$ of an inch in diameter. It may be made of *copper*, well bronzed, in preference to *glass*. Many of the author's experiments were, however, conducted with *glass* tubes of $\frac{1}{30}$ of an inch in diameter. For the fusion of large quantities of *platinum*, cuttings of *platinum* may be used; and these being placed

some impurity, or want of due proportion, in the *gaseous mixture.* When the *hydrogen* is prepared from *iron,* and the *oxygen* from *manganese,* the author has always found that a mixture of nine pints of *hydrogen,* added to four pints of *oxygen,* will afford, by combustion, a much more exalted temperature than when the same *gases* are mixed in the proportion of eight pints of *hydrogen* to four pints of *oxygen;* or two volumes, by bulk, of *hydrogen* to one of *oxygen.* But, adverting to the use of *oil* in the *safety-cylinder,* as a substitute for *water,* it will be evident to every chemist, upon trial of it, that the more tranquil ebullition of the *oil* will render his situation the more secure; because when *water* is used, the whole chamber of the *cylinder* becomes filled with foam; which is less likely to intercept the progress of explosion than *oil* in a state of ebullition. *Water,* moreover, propelled as steam from the *jet,* is a serious impediment to the *de-oxydizing* process; whereas *oil* always tends to promote it. Many *metallic oxides* are decomposed by *oil* at a boiling heat, and some of the *fixed oils* absorb *oxygen* at the common temperature.* Hence the use of *wax* and *tallow* in reviving *metals* from their *oxides.*

To conclude: the great barrier to investigation being removed in the annihilation of infusibility by the extraordinary powers of the *Gas Blow-pipe;* the utility of the instrument in

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within a *cupel,* or within a cavity scooped in a piece of *charcoal,* which answers the purpose, perhaps better, the end of a *copper jet* may be bent, so as to admit of a perpendicular instead of a horizontal direction of the flame upon the *metal.* In this manner, half an ounce of *platinum* cuttings, sold as waste, at 5*s.* per oz. may with ease be melted into a single globule or bullet, and afterwards rolled or drawn into wire for many useful purposes.

* *Aikin.* Chem. Dict. vol. II. pp. 176, 177.

analytical chemistry manifested; and the safety of experiments with this apparatus altogether established;* the author has only to recommend the use of it in a more particular manner to the *mineralogist,* owing to the characteristical changes, by which all mineral substances may be distinguished when exposed to its ordeal. The most *refractory* bodies now exhibit their peculiarities in FIRE as well as the most *fusible;* and in viewing them, he may call to mind the observation made by THEOPHRASTUS the *Lesbian;* first the disciple of PLATO, and afterwards of ARISTOTLE; who, in the Lectures which he delivered in the *Lyceum* at *Athens,* about two thousand years ago, directed the attention of *mineralogists* to these phænomena:† Ἐν αὐτῇ τῇ καύσει καὶ πυρώσει πλείους ἔχοντες διαφοράς.

* During an entire course of Public Lectures in *Mineralogy,* delivered before the University of *Cambridge,* experiments with the *Gas Blow-pipe* were daily exhibited after the manner here specified, without a single accident, or even a momentary interruption.

† "In ipsâ combustione et ignitione plures habent differentias." *Theophrasti de Lapid. Liber. ed. J. de Laet. L. Bat.* 1647.

Appendix to the Gas Blow-pipe.

THIS account of the *Gas Blow-pipe* was undertaken with an intention of restricting the narrative to such observations only as relate to the history of the Apparatus, and have not before been published; but it has been suggested to the author, that, as the accounts of his experiments with this instrument are dispersed in different periodical works, it is desirable for facility of reference, and for the greater convenience of persons repeating the same experiments, that they should be brought together under one point of view. At the same time, in doing this, it is proper to mention that the following account of those experiments is not merely a repetition. Some new trials have been made; and those which were described before have been so often and so carefully repeated, that a due reliance may be placed upon the accuracy of the statement. The *Mémoire* published by *Lavoisier* of his experiments upon the *action of fire* aided by *oxygen gas*;* and *Ehrmann's* Essay upon an *Art of Fusion*, conducted by the same means, to which the *Mémoire* of *Lavoisier* was affixed;† have been followed, as models, in drawing up the following summary.

* Mémoires de M. *Lavoisier* sur l'action du feu animé par l'air vital, sur les substances minérales le plus réfractaires, publiés dans les Mémoires de l'Académie Royale des Sciences, années 1782 et 1783.

† Essai d'un Art de Fusion à l'aide de l'air du Feu, par Mr. *Erhmann*, &c. *Strasbourg*, 1787.

PART THE FIRST:

Consisting of METALLIC ORES *infusible before the* Common Blow-pipe, *and reducible by the* Gas Blow-pipe *to the metallic state; often undergoing combustion in the moment of their revival.*

I. PURE OXIDE OF CALCIUM. (*Lime.*)

N. B. This substance is placed first; because neither *Erhmann*,* nor *Lavoisier* † could accomplish its fusion; ‡ and because it occurs first in the Author's *Methodical Distribution of Minerals*.§ It is, therefore, the first substance, of which the fusion is annually exhibited before the University of *Cambridge*.

LIME, in a state of perfect purity, and in the pulverulent form, being placed within a *Platinum* crucible, and exposed to the flame of the *Gas Blow-pipe*, its upper surface became covered with a *limpid botyroïdal glass*, resembling *Hyalite*: the inferior surface was quite *black*. Its fusion was accompanied by a lambent *purple* flame: this colour, therefore, may be considered as a characteristic hue of one, at least, of the *Oxides of Calcium*.

II. CRYSTALLIZED CARBONATE OF LIME. (*Iceland Spar.*)

During the attempt to fuse this substance (which is more refractory than any other, excepting the *Hydrate of Magnesia*), a

* "Il en est de même des *terres*, &c. On les fond toutes, excepté la *terre calcaire* pure." *Essai d'un Art de Fusion*, p. 62.

† "*La Chaux* n'étoit point fondue. - - - - - Cette même *Chaux* exposée au fouyer du grand verre ardent de *Tschirnhausen*, ne donne AUCUN INDICE D'ALTERATION." *Mémoire de M. Lavoisier, ibid. p.* 268.

‡ Professor *Hare*, in *America*, could not accomplish the fusion either of LIME or MAGNESIA, *per se*, by means of his hydrostatic blow-pipe. See *Annales de Chimie*, tom. xlv. p. 136.

§ Syllabus of Lectures in Mineralogy, p. 4. *Lond.* 1818.

beautiful lambent flame, of an intense *amethystine hue*, was exhibited. The same remarkable indication of combustion characterizes all the compounds of *Lime* before the *Gas Blow-pipe*. Its fusion was at last effected; and the result, a *brilliant limpid glass*.

III. HYDROUS CARBONATE OF LIME. (*Arragonite.*)

Owing to the crumbling disposition of this mineral when exposed to heat, its fusion is difficult to obtain; but its result agrees with that of pure *Lime*, and it is accompanied by the exhibition of *purple* flame, as in the instance of other *Limestones* and of *Strontian*.

IV. COMMON CHALK.

Easily fusible into a *yellowish grey enamel*. By further continuance of the heat, a clear pearly glass may be obtained, resembling SANTILITE; or *Siliceous Pearl Sinter*. The fusion of CHALK is also accompanied by the exhibition of a *purple* flame.

V. OOLITE. (*Ketton Stone.*)

This is one of the purest of the *Carbonates of Lime*,* and its fusion is proportionally difficult. It was, however, perfectly accomplished by means of the *Gas Blow-pipe*, in the presence of the Rev. Mr. *Gorham*, and Mr. *Carr*, of *Queen's College, Cambridge, January* 22, 1819, who were also present during all the following experiments with the *Limestones*. The *Oolite*, during fusion, exhibited a *purple flame*, attended by the escape of dense white fumes. It was fused into a *yellowish grey glass*, with mammillary intumescence.

VI. COMPACT TRANSITION LIMESTONE. (*Limestone of Parnassus.*)

The specimen was taken from the summit of *Parnassus* by the

* It was analyzed by the Rev. *J. Holme*, of *St. Peter's College, Cambridge*; who found it to consist wholly of *Lime* and *Carbonic Acid*.

author. It was fused, but with great difficulty; exhibiting, after fusion, a *white milky enamel*, with points of intumescence that were transparent.

VII. PRIMARY FOLIATED LIMESTONE.
(*Naxian and Thasian Marble.*)

One of the flakes of this broad-grained sparry variety of the *Parian Marble* was exposed to the most intense heat of the *gaseous flame*, which was immediately tinged by it, and assumed an intense purple hue, depositing a white oxide on the polished *iron* forceps used in supporting it. In a few seconds it was fused, and appeared covered with a *snow white enamel*, reflecting a great deal of light. The edges were also covered with a *white opalescent and translucid enamel;* exhibiting the colours and play of light of the noble *opal*. Here the fusion was quite perfect.

I. LIMESTONE FROM THE SUMMIT OF THE PRINCIPAL PYRAMID IN EGYPT.

This kind of *Limestone* is of a whitish-grey colour: it has an earthy fracture; and when briskly scraped with a sharp piece of *iron*, exhales powerfully the fetid odour of *sulphuretted hydrogen gas*. Exposed to the *gaseous flame*, dense white fumes were evolved: its fusion was then accomplished, and the result resembled that which was obtained in the fusion of *chalk;* namely, a *white frothy enamel*, full of bubbles.

IX. MATRIX OF THE HUMAN SKELETON DISCOVERED AT GUADALOUPE.—(*Calcareous Tophus—Tufaceous Limestone.*)

The fusion of this substance is extremely difficult; but it was satisfactorily accomplished; and the result was a most perfect *snow-white enamel*, beautiful in its intense whiteness. When first exposed to the *gaseous flame*, intumescence was visible, and the flame became tinged with a lively *amethystine purple* hue; a fine *white oxide* being deposited upon the *iron* forceps.

X. ANTIENT GIALLO ANTICO MARBLE FROM THE RUINS OF HADRIAN'S VILLA AT TIVOLI, NEAR ROME. (*Exceedingly compact Limestone.*)

This substance is nearly as refractory as *Iceland Spar*. During its fusion, the *gaseous flame* became tinged of a *purple colour*; and a *white oxide*, the result of *combustion*, was deposited upon the *iron* forceps. The ultimate result of its fusion was a *snow-white enamel*. Being placed in a *charcoal* crucible, it was deprived of its yellow colour, and a *halo* was formed round the mineral, upon the *charcoal*, of a yellow hue.

XI. ANCIENT ROSSO ANTICO MARBLER FROM POMPEII. (*Compact granular Limestone.*)

More readily fused than the preceding variety. *Purple flame.* The edges rounded, and beautifully glazed. *Translucid enamel*, resembling the purest *Chalcedony*.

XII. CRYSTALLIZED PHOSPHATE OF LIME. (*Apatite.*)

No decrepitation. Phosphorescence. Fusible into a *black shining slag*; depositing on polished *iron* forceps a *cupreous-coloured oxide*. Afterward scintillation, denoting a more evident effect of combustion, accompanied by a *reddish coloured flame*. Upon filing the slag, a globule appeared with a high degree of *metallic* lustre resembling that of *silver*. Its real nature unknown. It does not alter by exposure to air. This globule is still preserved by *Francis Lunn*, Esq. of *St. John's College, Cambridge*.

XIII. PHOSPHATE OF LIME OF ESTREMADURA. (*Compact Apatite.*)

Easily fusible into a *white enamel*, resembling, as to its external appearance, *spermaceti*.

XIV. GRANULAR SPARRY PHOSPHATE OF LIME. (*Apatite*), detached from its matrix of *magnetic iron oxide*, as found at *Gellivara* in *Lapland*.

This substance was fused into a *chocolate-brown glass*, which, owing to the *iron* present, acted upon the magnet. The colour must also be attributed to the *iron*.

XV. PURE OXIDE OF MAGNESIUM. (*Magnesia.*)

Fusion, *per se*, extremely difficult. When the powder is made to adhere (by moisture with distilled water and subsequent desiccation), and placed upon *charcoal*, it is fusible into a *whitish glass;* but the parts in contact with the *charcoal* acquire an imposing *pseudo-metallic* lustre. *Purple-coloured flame.*

XVI. HYDRATE OF MAGNESIA. (*Pure foliated Magnesia from* America.)

This substance is incomparably refractory: with the utmost intensity of the heat of the *Gas Blow-pipe*, it is ultimately reducible to a *white opake enamel*, invested with a thin superficies of *limpid glass*. Its fusion is accompanied with a *purple-coloured flame.*

XVII. ICONITE. (*Pagodite of China.*)

Easily fusible into a *beautiful limpid glass*, exhibiting a high degree of brilliancy.

XVIII. COMOLITE. (*Potstone.*)

Easily fusible, with combustion; the fused mass exhibiting to the naked eye a *dingy green-coloured glass*, almost *black*. Examined with a lens, it appears full of limpid acicular crystals, highly transparent.

XIX. TALC.

All the foliated varieties of this mineral are fusible into a *greenish glass.*

XX. SERPENTINE.

Most of the varieties of *Serpentine* exhibit, after fusion, globules of an *oak-apple-green colour*, with indented surfaces.

XXI. PURE OXIDE OF ALUMINUM. (*Alumina.*)

Fusible, without difficulty, into a *snow-white opake glass.*

XXII. CRYSTALLIZED OXIDE OF ALUMINUM. (*Sapphire.*)

A fine dodecahedral crystal of pure blue *Sapphire* was readily fused; and exhibited, during fusion, the singular appearance of greenish glass balloons, swelling out in grotesque forms, which remained fixed when the mineral became cool.

XXIII. CRYSTALLIZED RED CORUNDUM. (*Oriental Ruby.*)

Two *rubies* were placed upon *charcoal*, and exposed to the flame of the *Gas Blow-pipe*. Their fusion was so rapid, that it was feared the liquid substance would either become volatilized, or sink into the mass of *charcoal*. The current of the *gaseous mixture* penetrated this liquid matter, like a stream of air acting upon oil. After suffering it to become cold, a white and opake globule remained; the two *rubies* were melted into one bead, and had lost their *red* colour. Being a second and a third time suffered to undergo fusion, the same bead assumed a variety of shapes, resembling *Sapphire* after fusion. The *charcoal* communicated to it a superficies with *pseudo-metallic* lustre, which came off upon the fingers. A sensible diminution of bulk appearing after the third fusion, the operation was concluded. The bead then exhibited a pale *pink* colour.*

* The author will take this oppportunity of acknowledging the assistance he has received, in being enabled to repeat his experiments with *Sapphires, Rubies,* and *Emeralds,* by the kindness of *Edmond Waller Rundell,* Esq. who supplied pure specimens for this purpose.

XXIV. COMMON CORUNDUM.

(*Greenish-grey crystallized primary Corundum, from the East Indies.*)

Fusible, but with difficulty, into a *greenish-coloured translucid glass*, nearly transparent, which at last becomes melted into a bead-like form; or otherwise exhibits upon its surface minute cavities, caused by the escape of *gas* during its fusion. This *gas* is probably the same which *pure Silica* more abundantly exhibits. A slightly-coloured *greenish flame* accompanies the fusion of *Corundum*.

XXV. SUB-SULPHATE OF ALUMINA. (*Alumina of Newhaven.*)

This curious mineral admits of a very rapid fusion: the result is a *pearl-white translucid enamel*. A partial combustion may be observed to take place during its fusion.

XXVI. WAVELLITE.

Easily fusible into a *snow-white enamel*, resembling that of pure *Alumina*.

XXVI. RED SIBERIAN TOURMALINE.

(*Apyrous Tourmaline—Rubellite.*)

Loss of colour; fusible into a *white opake enamel;*—by further continuance of the heat, into a *limpid glass*.

XXVIII. ANDALUSITE.

(*Apyrous, or infusible Feldspar of Haüy.*)

Easily fusible into a *snow-white enamel*.

XXIX. CYMOPHANE.

(*Chrysolite, and Grizlit of the London Jewellers;* also *Chrysoberyl.*)

Fusible into a *pearl-white enamel*.

XXX. CYANITE. (*Sappare. Disthéne.*)

This mineral, owing to its refractory nature, was used by *Saussure* as a supporter, in experiments with the common *Blow-pipe*. It fuses very readily into a *snow-white frothy enamel.*

XXXI. HYPERSTENE.

Fusible into a *jet-black shining glass bead*, with a high degree of lustre.

XXXII. ZIRCON. (*Jargoon.*)

One of the most refractory substances. Exposed to the powerful heat of the *Gas Blow-pipe*, it becomes first opake, and of a white colour; afterwards, its superficies undergoes a partial fusion, and exhibits a *white opake enamel*, resembling *porcelain.*

XXXIII. SPINELLE. (*The Spinelle Ruby.*)

Fuses readily, and undergoes a partial combustion and volatilization, with loss of colour and of weight. One of the solid angles of an octahedral crystal of *Spinelle* was entirely burned off, and volatilized, in one of these experiments.

XXXIV. AUTOMALITE.
(*Spinellane. Zinciferous Corundum.*)

Fusible into a *grey enamel*, which intumesces, and, when cold, exhibits upon its surface a chrystallization resembling that of water upon a pane of glass. During its fusion, a deposit takes place upon the *iron* forceps used to support it, which is an *oxide* of a *yellow* and *yellowish-white colour.*

XXXV. TOPAZ.

Fusible into a *white enamel*, covered with minute limpid glass bubbles.

XXXVI. PYCNITE.

(*Red Schorl. Schorlite. Schorlaceous Beryl.*)

Fusible into a *snow-white enamel.*

XXXVII. PURE PRECIPITATED SILICA.

(*Peroxide of Silicium?*)

Becomes instantly fused into an *orange-coloured transparent glass.* The colour may be due, either to the *charcoal* serving as a support, or to the *carbon* of the *oil* used for making it into a paste. During the fusion of *Silica*, and so long as it be held in a liquid state before the flame of the *Gas Blow-pipe*, a *gaseous* substance is constantly escaping, in the form of bubbles, which rise and burst. The mass, at the same time, suffers little sensible diminution, although volatilization is evidently going on. As to the real nature of *Silica*, very little satisfactory information has hitherto been obtained: after a century spent in constant experiments, for ascertaining the real history of this extraordinary *combustible*, Chemists remain nearly in the situation of *Henckel*, when he made that remarkable exclamation—"*O Silex! Silex! quæ te matercula gessit?*"*—When *Silica* is fused in a *charcoal* crucible with an equal bulk of *iron*, the two substances combine; and the result, apparently, is an *alloy*, whiter than *iron*, but differing from this metal, in other properties, which have been noticed by *Berzelius.*† Whether *Silica* be really a *metallic* body, or, as it is believed by some of our own Chemists,‡ a combustible resembling *Boron* and *Carbon*, remains to be deter-

* De Orip. Lapid. cap. i. 54. 11°.

† A combination of *Iron-filings*, *Silica*, and *Charcoal*, after undergoing complete fusion, and being obtained in the form of globules, when dissolved in *muriatic acid*, gave out a greater proportion of *hydrogen gas* than the same weight of pure *iron* would have furnished. See *Thomson's* Chemistry, vol. I. p. 253. *Lond.* 1817.

‡ Ibid. p.252

mined. The Experiments with the *Gas Blow-pipe*, have not, in any degree, tended to explain the nature of this substance. The *dark-coloured powder* called *Silicon*, which was obtained by Sir *H. Davy* (who decomposed *Silica* by passing *Potassium* in excess through it, in a *Platinum* tube), would be the proper substance for trial in the exalted temperature of the *Gas Blow-pipe*. It is said to be "capable of bearing a very high temperature, without undergoing any change,"* resembling, in this respect, *Boron* and *Carbon*. Possibly this *dark-coloured powder* may be a *protoxide* of *Silicum*. An experiment which the author wishes to propose, if *Silicon* cannot be obtained in a separate state,† is to expose a small *Platinum* tube containing this *dark powder* mixed with the *potass* which has been made by the decomposition of the *Silica*, and to examine the result which might remain after the complete fusion of the *Platinum*, and the volatilization of the *alkali* before the *Gas Blow-pipe*.—Possibly, in this manner, *Silicon* itself might either be decomposed, or made to enter into combination with *Platinum*, or undergo some change which would make us better acquainted with its real nature.

XXXVIII. HYDRATE OF SILICA.

(*Santilate.—Pearl Sinter*, discovered in *Tuscany*, by Professor SANTI, of *Pisa*.)

Perfect fusion into a *translucid pearly enamel*, which becomes globular, and is full of air-bubbles. Dense *white* fumes are evolved during the whole process.

XXXIX. HYDRATE OF SILICA. (*Hyalite*.)

Fusible into a *snow-white frothy enamel*, full of brilliant limpid

* See *Thomson's* Chemistry, p. 252.

† *Silicon* is converted into *Silica*, by coming into contact with *water*: hence the impossibility of washing off the *Potass*, to obtain it in a separate state. *Ibid.*

bubbles. The specimens fused were selected from masses highly diaphanous, which invested the surface of decomposing *Trap*.

XL. HYDRATE OF SILICA.
(*Sand Tubes of Drigg, in Cumberland.*)

Instantaneous fusion, similar to that of *Hyalite*, into a bead of *pure limpid glass*, containing bubbles.

XLI. HYDRATE OF SILICA. (*Opal.*)

Perfect fusion into a *pearl-white enamel;* resembling *Santilite* in its natural state.

XLII. HYDRATE OF SILICA. (*Chalcedony.*)

Perfect fusion into a *snow-white enamel.*

XLIII. HYDRATE OF SILICA. (*Egyptian Jasper.*)

After being exposed to a strong heat in a *Platinum* crucible, for the purpose of driving off the water of absorption, and thereby preventing decrepitation, this *hydrate* was easily fused into a *greenish glass*, full of bubbles.

XLIV. HYDRATE OF SILICA. (*Common Flint.*)

Perfect and very rapid fusion into a *snow-white frothy enamel.*

XLV. CRYSTALLIZED SILICA. (*Rock Crystal.*)

The most highly diaphanous specimen that could be procured was exposed to the flame of the *Gas Blow-pipe* with perfect success. In the first trial, the edges only were fused, and resembled *Hyalite*. In the second trial, the fusion was completed: the *crystal* then appeared in the form of one of *Prince Rupert's drops;* having lost nothing of its transparency, but being full of bubbles.

XLVI. COMMON WHITE QUARTZ.

Fuses much more readily than *Rock crystal.* This was observed by *Lavoisier;* when having failed in his endeavour to melt *Rock crystal,** he accomplished the easier fusion of *common white Quartz.* Hence he inferred that *white Quartz* is not a simple substance, as it is commonly believed to be; but that, besides *Silica,* it holds in combination some other foreign ingredient, hitherto unobserved, to which its *opacity* and *fusibility* are due,† in its fusion, however, it agrees with *Rock crystal,* the results in either case being precisely the same.

XLVII. LEUCITE.

(*Amphigene. White Garnet of Vesuvius.*)

This substance is also fusible into a *perfectly limpid glass,* containing air-bubbles.

XLVIII. PERUVIAN EMERALD.

Readily fuses into a round head of the most highly limpid glass, without bubbles; being thereby entirely deprived of colour, and resembling, after fusion, the limpid white *Sapphire.*

*"Le feu le plus violent qu'on ait encore pu produire sur cette substance *(le cristal de roche)* ne lui enleve ni sa transparence, ni aucune de ses propriétés."—*Mémoire de M. Lavoisier sur l'effet que produit ser les pierres précieuses un degré de feu trés-violent, p.* 319. *Strasbourg,* 1787.

†"Que *le Quartz,* même le plus pur et le plus blanc, prend à ce feu un degré de ramollissement beaucoup plus sensible que *le cristal de roche,* UNE ESPECE MEME DE FUSION, ce qui semble annoncer que *le Quartz* n'est point une matière simple, comme on le pensoit, et qu'il contient, outre la substance qui lui est sans doute commune avec *le cristal de roche,* une matière étrangere qui lui donne l'opacité, et qui lui communique un certain degré de fusibilité."—*Ibid.*

XLIX. SIBERIAN BERYL.
(*Aigue Marine. Asiatic Emerald.*)

Fusible into a *limpid glass*, containing bubbles. This substance is sometimes described as fusible by means of the *common Blow-pipe;* but the author was never before able to accomplish its fusion.

L. LAZULITE. (*Lapis Lazuli.*)

Fusible into a transparent and almost *colourless glass*, slightly tinged with a *green* colour, and full of bubbles.

LI. GADOLINITE. (*Ytterbite.*)

Fuses with rapidity; exhibiting a *jet-black shining glass*, with a high degree of lustre.

PART THE SECOND.

Consisting of METALLIC ORES, *either incapable of being volatilized by the* Common Blow-pipe, *or infusible by means of that instrument; all of which are either reducible to the metallic state before the* Gas Blow-pipe, *or undergo combustion and volatilization in the moment of their revival.*

N. B. In proceeding to state the revival of two of the *metals* of the *Earths* before the flame of the *Gas Blow-pipe*, and of other *metals* under similar circumstances, it may be proper to prefix the ingenious theory of the Rev. *J. Holme*, of *St. Peter's College, Cambridge*, respecting the cause of the decomposition which takes place: "It is entirely owing to the powerful attraction which *hydrogen* has for *oxygen* at such an exalted temperature."—The reduction or decomposition of *oxides*, when exposed to the *gaseous flame*, is therefore often instantaneous; and it is as instantly followed by the *combustion* of the minute particles of metal thus revived; and ultimately by the deposition of the regenerated *oxide*, which is a result of that *combustion*. Hence the *coloured flame*: hence, also, the appearance of an *oxide* in a state of incomparably extreme division upon the supports used, whether of *metal* or *charcoal*; an irrefragible test of the revival of the *metal* from whose *combustion* this newly-formed *oxide* has been derived.

For the success of the next ensuing Experiment, it is absolutely necessary that the *Barytes* should not be in the state of *hydrate*; yet it is difficult to procure it entirely destitute of water. The manner of its *fusion* before the *Gas Blow-pipe*, will instantly shew whether the experiment will succeed or fail. If there be any *deliquescence*, it will fail; or if the *Barytes*, instead of being fused into a slag of a deep *jet-black* colour, assume a *greyish* and *horny* appearance, it will also fail. But as the success of the experi-

ment has so often been attested, and in a public Lecture Room, where it has been repeated over and over again, until every person present expressed his conviction as to the revival of the *metal* —and, moreover, as the fact of its revival is admitted by the greatest Chemist now living, to whom the metal of *Barytes* was transmitted in *Naftha* from *Cambridge*—the author, without further observation, will proceed in the account of his Experiments.

LII. PURE OXIDE OF PLUTONIUM,* OR BARIUM.
(*Barytes. Barytic Earth.*)

A portion of this *oxide*, prepared by Mr. *W. Allen*,† (adhering in a thin cake, as it came from the crucible) was supported in a pair of forceps made of *slate*, and exposed to the flame of the *Gas Blow-pipe*. It became fused very readily, and assumed the

* In proposing the substitution of *Plutonium*, instead of *Barium*, for the name of the *metal of Barytes*, the author was actuated solely by a regard to truth, as essential to science. The impropriety of naming one of the *lighter* metals, from *βαρὺς*, signifying *heavy*, will surely be obvious, when it now appears that the name implies an untruth. The *specific gravity* of the *metal* of *Barytes* equals 4·000. With what propriety, therefore, can it be denominated *Barium*, the *heavy* metal? Yet nick-names are hard to remove: and that this is a nick-name is evident, because it is notorious that it was given to the base of *Barytes* by anticipation, as soon as the illustrious Chemist, who afterwards applied this name to it, had decomposed the *alkalies;* long before he himself admitted the appellation. The *metal* of *Barytes*, in whatsoever manner its presence may be demonstrated, owes all the proofs of its existence to the *dominion of fire;* hence the propriety, at least, of giving to it the name of PLUTONIUM. Has it ever been deemed improper to suggest the alteration of a name, when it involves an error? Was not this done with respect to *muriatic acid?* The name which *Priestley* bestowed upon *Oxygen*, was changed first by *Condorcet*, afterwards by *Lavoisier;* and now the name of the same substance is again likely to undergo an alteration.

† Of Plough Court, Lombard Street, London.

form of a *jet-black shining slag:* its fusion being accompanied with a *chrysolite-green-coloured flame*, and, in some instances, with a slight degree of *scintillation:* at the same time, dense *white fumes* were evolved, and the supporter became invested with a *white oxide*, evidently a result of the *combustion* which had taken place. The *slag* being now examined, exhibited externally the dark metallic aspect of the stalactitic *oxide of manganese;* upon being submitted to the action of the file, it was sonorous; and when cut by the file, a regulus was disclosed, having the *metallic lustre* of *silver*, or of pure *iron*, and reflecting as much light. When cast into water, gaseous bubbles were evolved, until the whole of the *metal*, by decomposing the water, was again converted into *Barytes*. Also, if left exposed to the action of atmospheric air the *metallic lustre* disappears, and the whole of the *slag*, gradually combining with *oxygen*, falls into a white powder, which is *Barytes*. Other properties characteristic of the *metallic* base of *Barytes*, as thus obtained by means of the *Gas Blow-pipe*, have before been pointed out; such as the *alloys* formed with it with other metals, which became subject to a slow spontaneous decomposition upon the action of the atmosphere;* &c. &c. But the description given by Dr. *Thomson* of the *Metal* of *Barytes* occurs in the last edition of his Chemistry: it is therefore much more worthy of the attention of the public, than any thing the author can state as to its chemical character, and may be inserted in his own words:† "Dr. *Clarke* has decomposed *Barytes*, by exposing it to an intense heat, produced by the combustion of a stream of *oxygen* and *hydrogen gas*, mixed together in the requisite proportion to form water. He has given to the *Metal* of *Barytes* the name of *Plutonium*." Dr. *Thomson* then proceeds to relate its properties, and describes it as "a solid *metal* of the colour of *silver;* melting at a temperature be-

* *Thomson's* "Annals of Philosophy," for *November*, 1818. pp. 360, 361, &c.

† *Thomson's Chemistry*, vol. I. p. 342. *Lon.* 1817.

low redness, and not being volatilized by a heat capable of melting plate-glass, but at that temperature acting violently upon the glass; probably decomposing the *alkali* of the glass, and converting it into a *protoxide*. When exposed to the air, it rapidly tarnishes, absorbs oxygen, and is converted into *Barytes*. It sinks rapidly in water, and seems to be at least four or five times heavier than that liquid. It decomposes water with great rapidity; *hydrogen* is emitted; and it is converted into *Barytes*. When strongly pressed, it becomes flat, and hence appears to be both *ductile* and *malleable*."

LIII. PURE OXIDE OF STRONTIUM. (*Strontian Earth.*)

Here a different process is necessary: the revival of the *metal* is rendered more difficult, owing to the pulverulent state of the earth. The particles must be made to adhere, before fusion can be accomplished; and this *oxide* being much more refractory than the preceding, is almost *infusible per se*, even with the aid of the *Gas Blow-pipe*. After the *metal* is revived, it more rapidly combines with the *oxygen* of the atmosphere; and is therefore sometimes changed before it can be submitted to examination. The mode by which the author often succeeded in the revival of the *metal* was conducted in the following manner:

1. Mix the earth into a paste, with *lamp-oil*.
2. Place it within a *charcoal* crucible.
3. Suffer the *gaseous flame* to act upon it until it be sufficiently coherent to be raised with a pair of forceps.
4. Expose it, supported by the forceps, to the *gaseous flame*, until a partial fusion have taken place.
5. Place it again within the *charcoal* crucible, and assist the fusion by as little *borax* as possible: it will become partially, and may perhaps appear to be entirely, vitrified.
6. Expose this vitrified substance again, by means of the forceps, and without the *charcoal*, to the *gaseous flame*: it will now begin, for the first time, to exhibit the ap-

pearance which the *Barytes* assumed after its fusion; namely, a *jet-black shining substance*, with some degree of *metallic* lustre externally: this substance, when cut by the action of a file, will exhibit a metal with all the lustre of *silver*. During the whole of this experiment, the flame is tinged with the intense amethystine purple characteristic of the oxides of *strontium*, *calcium*, and *magnesium*. Scintillation takes place; dense *white fumes* are evolved, which fasten upon the forceps; and care is requisite that these fumes be not inhaled by the lungs during the latter part of the experiment; because they are highly acrid and suffocating.

LIV. SILICIFEROUS OXIDE OF CERIUM. (*Cerite.*)

This substance was speedily reduced to the *metallic* state. A bead of the *metal* obtained by its fusion exhibited crystallization upon its surface in cooling. It became invested with shining dendritic acicular prisms, like those of the *sulphuret of antimony*. Being afterwards cut by the file, it exhibited a bright *metallic* surface, resembling that of *arsenical iron*, both as to its lustre and colour. It was not at all affected by the magnet. For some time it preserved its *metallic* lustre, although exposed to atmospheric air: examined after the lapse of a twelvemonth, it had no more lustre than *iron slag*; but being again submitted to the action of the file, a new surface was laid bare, possessing all the origin l *metallic* lustre of the former one.

LV. FERRIFEROUS AND MANGANESIFEROUS OXIDE OF COLUMBIUM. (*Tantalite.*)

Instantaneous fusion leaving a *jet-black shining bead*, not magnetic, upon *charcoal*, with a considerable degree of metallic lustre. Its external appearance, after undergoing fusion, resembles fused *Barytes*; and when cut by the file, exhibits an equal degree of *metallic* lustre.

LVI. FERRIFEROUS OXIDE OF CHROMIUM. (*Chromite.*)

Fusible with ease into a dark globule without any *metallic* lustre, but highly magnetic.

LVII. GENICULATED OXIDE OF TITANIUM. (*Titanite.*)

Crystals of this substance, brought by the late Professor *Tennant* from the porcelain manufactory of the *Sevres*, near *Paris*, were presented to the author by *H. Warburton*, Esq. One of those crystals was exposed to the most intense heat of the *gaseous flame*, in a *charcoal* crucible, and borax afterwards added: a metal appeared, flowing, in a state of ebullition, upon the *charcoal*. When cooled and taken out, it exhibited a *reddish-coloured* mass, which, examined by a lens, was invested with minute acicular crystals, like hairs, crossing each other, reticularly, in all directions. This appearance was evidently owing to a recombination of the *metallic* base with *oxygen*; the crystals being of the same nature as the prisms of red oxide of *Titanium* seen in *rock-crystal*, and by *French* dealers in minerals called *Cheveux de Venus*. The same substance being again exposed to the temperature of the *gaseous flame*, held in forceps, without *charcoal*, was fused after the manner described in the revival of *Strontium*, and reduced to a pure *metal*. This *metal*, with a black surface, upon being cut by a file, exhibited the lustre and colour of polished *iron*. It should seem, therefore, that the colour of *Titanium* is not *red*, as it has been described in books of chemistry. It remains, however, to be ascertained, whether the substance thus characterized by *metallic lustre*, and which continues unaltered when exposed to air, be not, after all, in the state of an *oxide*, from the discovery made in using the *Gas Blowpipe*, with regard to an *oxide of Tin*, which will presently be more fully mentioned.

LVIII. EXPERIMENTS WITH THE OXIDES OF URANIUM. (*Pechblende.—Uranite.*)

In all the attempts which the author made to obtain a pure *oxide* of *Uranium* by the analysis of *Pechblende*, it was contaminated with *iron*, and exhibited, after fusion, before the *Gas Blow-pipe*, a *magnetic bead*. The process used was that recommended by Professor *Jacquin* of *Vienna*. *Pechblende* was dissolved in concentrated *nitric acid*, and evaporated to dryness; distilled water being added and filtered. From the filtered solution, *carbonate of potass* threw down a *white* precipitate, which became *yellow* upon the filter. This *peroxide of Uranium* was then mixed with *oil*, and exposed to the flame of the *Gas Blow-pipe*, which converted it into the *black protoxide*.* It was then fused, and a *grey metallic bead* was obtained, which acted upon the magnet. Being again dissolved in *nitro-muriatic acid*, and the acid evaporated to dryness, and distilled water added, the solution yielded an intense *blue* precipitate to *Prussiated alkali:* the predominance of *iron* was thereby fully attested. But the process by which the author obtained a *grey metallic bead*, not magnetic, and having all the properties of *Uranium*, was much more simple. For this purpose, he exposed, in a *charcoal* crucible, before the flame of the *Gas Blow-pipe*, a crystal of the *native oxide* of the metal, which is utterly *infusible* before the Common *Blow-pipe:* it was the green foliated *oxide* of *Uranium* from *Cornwall*. Upon the first action of the flame, the *green* colour disappeared. The *oxide* then became *white*. Fusion ensued, attended with a slight but decisive smell of *sulphur*. The substance then exhibited a vehement ebullition, accompanied by a scintillation denoting the combustion of some substance. The revival of the metal immediately followed, in the form of a *reddish-brown* globule. When cut by the file, it had a *metallic grey* colour, and its metallic lustre resembled that of *iron;* but it was not magnetic. It

* *Aikin's* Chem. Dict. p. 455. *Lond.*

was brittle, and seemed to be one of the hardest of the metals. PECHBLENDE, *per se*, was then exposed to the same temperature, held in a pair of polished *iron* forceps: it was reduced to a metal resembling *steel*, but so exceedingly hard, that the sharpest file would scarcely touch it. During its fusion and *combustion*, it deposited, on the *iron* forceps, a *greenish-yellow oxide*, of the colour of the Canary-bird.

LIX. SULPHURET OF MOLYBDENUM (*Molybdena.*)

Became instantly fused; sending forth dense white fumes, and covering a pair of *iron* forceps, used to support it, with a *snow-white oxide* of the metal. Among the particles of this *oxide*, when examined with a lens, minute globules of a *silver-white metal* were discernible. The melted mass itself was reduced to a metal, which, when cut by the file, exhibited *metallic lustre*, resembling that of *arsenical iron*.

LX. PEROXIDE OF SCHEELIN. (*Tungstic Acid.**)

This had been obtained by Professor *Hailstone* in the form of a *yellow* precipitate. It was made into a paste with olive-*oil* and placed within a *charcoal* crucible. Being exposed to the *gaseous flame*, it became fused; and its fusion was attended with a partial combustion and volatilization of its *metallic* base; depositing, first, a deep *blue oxide*, and afterwards a *yellow oxide*, upon the *iron* forceps used to support the *charcoal* crucible. The *metal* then appeared to be perfectly revived, and invested the surface of the *charcoal* with a metallic coating, the colour of which was intermediary between that of *gold* and *copper*. This experiment was afterwards repeated, in the presence of Professor *Hailstone* and other Members of the University.

* By some considered as an *acid*. (See *Thomson's* Chemistry, vol. I. p. 552. *Lond.* 1817.) The *Tungstic Acid* of *Scheele* is different from this *oxide*. It is a *white* powder of an acid taste, and soluble in water; which has since been proved to be a triple salt. (*Ibid.*)

LXI. FERRIFEROUS AND MANGANESIFEROUS OXIDE OF SCHEELIN. (*Wolfram.*)

This substance was readily fused, and as readily reduced to the *metallic* state. It was first melted into a black slag, which, by continuance of the heat, was held in a boiling state upon *charcoal* during three minutes. It then exhibited a *metallic* bead, which, upon examination, externally resembled the *magnetic iron oxide* of *Lapland;* not being, however, magnetic. It admitted the action of a sharp file, disclosing a high degree of reguline *metallic lustre.*

LXII. METALLOÏDAL OXIDE OF MANGANESE, CRYSTALLIZED IN RIGHT PRISMS WITH RHOMBOÏDAL BASES.

Vauquelin considers this as the purest of all the ores of *Manganese,* being destitute of *iron.* It was instantly brought into fusion, and reduced to a brilliant *metal,* which, when cut by the file, was *white* as *silver,* and on which the marks of the teeth of the file were visible. This *metal* enters into combustion, like *iron;* exhibiting a vivid scintillation.

LXIII. GREY OXIDE OF MANGANESE.

This ore contains so much water of absorption, that, to avoid decrepitation, it was necessary to expose it for some time to a strong head, in a crucible. Afterwards, it was quickly fused; and a *metallic slag* was obtained, which, upon being cut by a file, exhibited a shining *metallic* surface, having the reguline lustre of *iron,* but with something of a darker hue.

LXIV. CARBURET OF MANGANESE. (*Kish—Carbonaceous substance which floats upon Pig-Iron during its first fusion.*)

Exposed, *per se,* to the *gaseous flame,* scintillation ensued, of a very brilliant nature, resembling the sparks ejected from the sort of fire-work called "*a flower-pot.*" When placed upon

charcoal, the same appearance took place, until fusion commenced, when a bead of *metal* was left upon the *charcoal*, which began afterwards to boil; and then such a vivid combustion began, that the whole of the metal seemed to be sent forth in a volume of sparks. The bead of *metal*, when cut by a file, exhibited a bright *metallic* lustre, like that of *iron*. Both before and after fusion, this substance is magnetic.

LXV. BLACK OXIDE OF COBALT,

Fused, and reduced to the *metallic* state. The *metal* had a *white silvery* appearance, and was partly ductile. A remarkable effect was visible upon the *iron* supporting forceps, which became invested, during the fusion of the *oxide*, with a shining substance resembling *Brunswick-black* varnish.

LXVI. CRYSTALLIZED SULPHURET OF ZINC.
(*Resin Blende.*)

This substance was fused, and reduced to the *metallic* state; the metal becoming visible in the centre of the melted ore; but in the parts more exposed to the action of the *gaseous flame*, the metal had been burned and volatilized; the result of its *combustion* being deposited in the form of a *white oxide*, which covered the *charcoal* used as a support. During its *combustion*, the *gaseous flame* appeared of a *sapphire-blue* colour.

LXVII. NICKEL ALLOYED WITH PALLADIUM.

This beautiful alloy is easily formed before the *Gas Blow-pipe*, by placing the two metals together upon *charcoal*. When alloyed in parts of equal bulk, the alloy is so far malleable, that it admits of being flattened by a common hammer, upon a blacksmith's anvil. After being filed and polished, its surface becomes a perfect mirror, reflecting more light than any other

metallic compound. This alloy might afford a useful and highly ornamental substance in the Arts; perhaps surpassing in lustre the most splendid metals known; and it might be advantageously appropriated to the manufacture of telescope-mirrors.

LXVIII. NICKEL ALLOYED WITH IRON.

The two metals were fused together, in equal parts, by bulk. Previously to their union, there was a vivid *combustion*, but it ceased in the instant of their combination. The fusion was afterwards more tranquil, with less of ebullition; the result being a globule of *white* and highly splendid alloy.

LXIX. TIN OXIDE. (*Wood Tin.*)

Fusion—deposition of a *white oxide* on the *iron* forceps—violet-coloured flame—scintillation—escape of white fumes—*slag* of a *jet-black colour*, which, when cut by the file, exhibits a high degree of *metallic* lustre, but is not reduced.* In some of these experiments with WOOD TIN, *white* shining vitreous crystals, in quadrangular tables, were observed in the *white oxide* deposited on the forceps.

LXX. GRANULAR TIN OXIDE OF THE MOLUCCA ISLES. (*Tin-Stone, in grains.*)

This ore was brought to *Europe* by Professor *Thunberg*, from whom the author received it at *Upsal*, in *Sweden*. It is in the form of *black* grains, which are *octahedrons*. When placed upon *charcoal*, they were easily fused and reduced: the fusion, as in the instance of *Wood Tin*, being attended with a *violet-coloured* flame; and this appearance immediately preceded the revival of the *metal*, in a perfectly malleable state.

* See *Thomson's* Chemistry, vol. III. p. 508. *Lond.* 1817.

LXXI. RED IRON OXIDE.

(*Fibrous Red Hæmatite—Wood Iron.*)

This ore was placed upon *charcoal*, where it became rapidly fused. Being reduced to a bead of *metal*, it then began to exhibit combustion, and a brilliant scintillation. When cold, and cut by a file, its *metallic* lustre was conspicuous, and it seemed to be almost malleable. Its more perfect reduction was precluded by its combustion.

LXXII. COMBUSTION OF IRON-WIRE AND OF STEEL.

This affords one of the most brilliant and beautiful experiments with the *Gas Blow-pipe*. Very stout *iron-wire* is consumed almost in the instant that it is brought into the *gaseous flame*; and its combustion is attended with such a vivid scintillation, that it displays a very pleasing fire-work. A part of the metal remaining fused at the end of the wire is rendered brittle by the operation. If a *steel* watch-spring be substituted for the *iron*-work, the effect is yet more striking; the combustion of the *steel* literally causing a shower of fire.

LXXIII. ATMOSPHERIC IRON ORE. (*Meteoric Stones.*)

According to the analysis which *Klaproth* made of the *meteoric stone* which fell at *Stannern*, in 1808,* it agrees very remarkably, in its principal constituents, with the *Hydrous Silicate* of *Iron*, to which *Berzelius* gave the name of *Hedenbergite*,† found at *Tunaberg* in *Sweden*,* One being considered as an ore of

* *Klaproth*, v. 252. *Thomson's* Chemistry, vol. III. p. 200. *Lond.* 1817.

† *Afhandlingar*, II. 164. *Thomson's* Chemistry, vol. III. p. 484. *Lond.* 1817.

iron, the other may bear the same appellation, although a concretion formed in *air*, instead of a concretion formed in *water*. The action of either, when exposed to the *gaseous flame*, will not be found very materially to differ. A fragment of one of the *meteoric stones* that fell at *L'Aigle* in *Normandy*, weighing eight grains, was placed upon *charcoal*, and submitted to the action of the *Gas Blow-pipe*. The moment the heat began to act, it became fused, and, when cold, exhibited a *black slag*: by continuance of the heat, this *slag* began to boil, and was melted at last into a bead, which, though considerably reduced in size, had sustained no diminution of weight, its density having increased as its bulk diminished. It was then *magnetic*; and when cut with a file, exhibited *metallic* lustre. The further revival of the *metal* was checked by its *combustion*, as the ore became more and more reduced. An approach, however, towards the revival of *iron*, by the decomposition of an ore from the atmosphere, was irrefragably proved by the result of this experiment.

LXXIV. COPPER WIRE.

Rapid but tranquil fusion, *without combustion*.

LXXV. ALLOY OF COPPER AND TIN. (*Ancient Bronze.*)

Fusion perfectly tranquil, as in the preceding experiment, and *without combustion*.

LXXVI. COPPER ALLOYED WITH ZINC. (*Brass.*)

Fusion, interrupted by flashes, and by a sputtering noise, almost amounting to decrepitation. Flame of a *chrysolite green*

* METEORIC STONE OF STANNERN.		HEDENBERGITE.	
Iron	23	Black Oxide of Iron	35·25
Silica	48	Silica	40
Lime	9	Lime	3·37
Alumina	14·50	Alumina	0·37

colour, differing from that exhibited by the fusion of *pure copper* or of *bronze*. A flocculent *white oxide*, owing to the combustion of the *zinc*, copiously deposited on the *iron* supporting forceps. These remarkable phænomena attending the exposure of *brass* to the *gaseous flame* will be applied to the pursuits of the *Antiquary*, as well as to those of the *Chemist*; because they afford an easy test for distinguishing *antient bronze* from a spurious imitation in *brass*. Two *bronze* medals, one struck under the *Ptolemies* in *Egypt*, the other a *Roman* medal of *Marcus Aurelius Antoninus*, were submitted to this test. In either instance, the fusion of the *alloy* was tranquil, without *combustion*, and without any deposit being made of a *white oxide* on the forceps. Afterwards, by placing the results in *nitric* acid, the *copper* was dissolved, and *tin* remained, in the form of a *white* precipitate: this precipitate being collected, washed, and dissolved in *muriatic* acid, afterwards precipitated *platinum* from its solution in *nitro-muriatic* acid. The *specific gravities* of the *alloys* used in these medals were as follow:

Bronze medal of the PTOLEMIES	8,2777
Bronze medal of MARCUS AURELIUS ANTONINUS, .	8,6129

LXXVII. ORES OF SILVER, AND PURE SILVER.

When pure *silver* wire is exposed to the *Gas Blow-pipe*, it takes fire, and burns with a light *green* flame; the metal coming away, at the same time, in dense *white* fumes. This volatilization of *silver* was noticed by *Vauquelin*, who placed the metal upon *charcoal*, and urged the volatilization by means of a current of *oxygen gas*.* A similar result accompanies the fusion of many of the *silver* ores: the *metal* being rapidly revived, is almost as instantaneously sublimed.

* Annales de Chimie, 89, 239. *Thomson's* Chemistry, vol. I. p. 474. *Lond.* 1817.

LXXVIII. SILVER WITH THE METAL OF BARYTES.

The alloy obtained in this experiment was very remarkable, because during two months it preserved its *metallic* appearance unaltered, and was so readily cut by the file, disclosing always a *metallic* lustre, that its lustre was attributed to the *silver* which it was supposed predominated in the *alloy*. But at the expiration of time now mentioned, the entire mass assumed an earthy form, simply by its exposure to atmospheric air in a warm and dry room. Its particles, ceasing to cohere, and entirely destitute of any *metallic* lustre, separated from each other, so that nothing remained of the *alloy* but the pulverulent appearance which had resulted from its disintegration.

LXXIX. COMBUSTION OF PURE GOLD.

As this experiment affords decisive evidence of the *combustion* of *Gold*, and, of course, its combination with *oxygen*, and also exhibits the *oxide* under a very beautiful appearance, it may be considered as one of the most pleasing experiments with the *Gas Blow-pipe*. That the metal might be exposed in its purest state to the action of the *gaseous flame*, it was precipitated from a solution of the *ore of Tellurium* from *Nagyag* in *Transylvania*. A small quantity of *gold* thus obtained was first fused with *borax*, to make the bead of the pure metal adhere to the end of a tube of a tobacco-pipe made of pipe-clay. In this state, being conveniently fixed for trial before the *Gas Blow-pipe*, it was exposed to the action of the *gaseous flame*. Owing to the exalted temperature, the light was so intense, that the *gold* was not discernible in the midst of it; consequently the flame sometimes operated rather on the *supporter* than on the *metal;* and it was necessary to check the operation, in order to observe whether the bead had not been driven off. Upon examination, it appeared that the *pipe-clay* had been fused, the *gold* being partly buried beneath its surface: the *borax*, mixing with the fused *clay*, ex-

hibited a beautiful *glass of gold;* and part of the tube, where fusion had not taken place, was invested with a shining surface of the *metal*, as if it had been gilded and burnished. The most striking phænomenon was exhibited around this central appearance. A sort of *halo* or red circle, of the most lively *rose colour*, surrounded the whole; the colour being most intense towards the central point where the *gold* was fixed, and gradually dying away upon the white surface of the pipe-clay. By renewing the application of the *gaseous flame*, the bead of *gold*, which, in its first operation, had been considerably diminished in size, was nearly all of it volatilized.

LXXX. ARENACEOUS ORE OF PLATINUM. (*Platina.*)

Fusible into a globule of brittle alloy, with a tarnished and dull aspect.

LXXXI. PURE PLATINUM.

The fusion of this metal, owing to the great improvements here mentioned in the mode of using the *Gas Blow-pipe*, is now become so easy, that this metal melts faster than *lead* in a common fire. It is no longer necessary to make use of wire in exhibiting its *fusion* and *combustion*. The cuttings which are sold by the manufacturers of *Platinum* utensils are placed in a *cupel*, either mounted on a stand or held in a pair of forceps. The mouth of the *jet* is bent downwards,* so as to admit of a perpendicular direction of the *gaseous flame* upon the metal in the *cupel*. The flame is then suffered to act upon the *Platinum;* about a quarter of an ounce of the metal being placed in the

* Jets, thus prepared for the *Gas Blow-pipe*, having a bore $\frac{1}{36}$ of an inch in diameter, having been made, according to the author's directions, by Mr. *Newman*, of *Lisle Street, Leicester Square;* together with all other apparatus necessary for the Experiments here described.

cupel at first. As soon as this begins to melt, more may be added; until a *cupel* of the common size is nearly full of the boiling metal: and in this manner a mass of *Platinum*, weighing half an ounce, at the least, may be obtained in one brilliant bullet. This, when rolled out, so that, all air-holes being removed, the mass possesses a uniform density, will be found to have a *specific gravity* equal to 20·857. During the fusion of the metal, its *combustion* will be often, if not always, apparent. It will burn with scintillation; and particles of the *black protoxide* of *Platinum*, if care be used, may be caught upon a sheet of white paper while the *combustion* is going on.

LXXXII. PLATINUM ALLOYED WITH THE METAL OF BARYTES.

A bead of pure *Platinum*, weighing one grain, was placed in a *charcoal* crucible with a bead of equal weight of the *metal of Barytes*. The two metals being brought into fusion by the *gaseous flame*, ran together into an *alloy* of a *bronze* colour, weighing two grains. This alloy preserved its *metallic* appearance during twenty-four hours, when it fell into a reddish powder, resembling the *peroxide* of *Platinum*.

LXXXIII. PLATINUM WITH SILVER.

This *alloy* is easily formed upon *charcoal*, before the *Gas Blow-pipe*. It is so malleable, when the metals are combined in parts of equal bulk, that a large bead of it may be extended, by means of a hammer, into a circular plate, without any fracture towards the edge. Its lustre, when polished, is equal to that of pure *silver*; but, owing to its superior hardness, it might be serviceable in the Arts and in coinage.

LXXXIV. PLATINUM WITH GOLD.

This *alloy* has been already described, in a former part of this work. It may be formed as in the preceding experiment, upon

charcoal, with great ease. But if the quantity of the *Gold* do not exceed nine-tenths of the *Platinum*, its colour is tarnished, if not entirely destroyed, by the presence of the latter metal.

LXXXV. PLATINUM WITH COPPER.

The metals were combined in equal parts, by weight. The *alloy* is remarkably fusible, and will continue in a state of vehement ebullition after the stop-cock of the *jet* is closed for the extinction of the *gaseous flame*. This alloy is soft; easily cut by a file; malleable; and of a pale colour, resembling that of pure *gold*. Indeed, it seems as if *gold* might be thus imitated, both with regard to its *specific gravity* and colour.

LXXXVI. PLATINUM WITH IRON, *in equal parts, by weight*.

This *alloy* is malleable; but so hard, that a file will scarcely cut it. When the two metals are made to combine in a *charcoal* crucible, their joint *combustion* exhibits a very brilliant fire-work. The surface of the alloy, when polished, exhibits a very high degree of lustre.

LXXXVII. PLATINUM WITH IRON, *in equal parts, by bulk*.

This *alloy* is brittle. In cooling, air-cavities are left; and the alloy, like *Bismuth* after fusion, exhibits a minute but brilliant crystallization.

LXXXVIII. PURE PALLADIUM.

Easily fusible before the *gaseous flame*, with combustion and scintillation, into a globule with a tarnished appearance, resembling *lead* that has been exposed to the action of the atmosphere.

LXXXIX. PALLADIUM WITH THE METAL OF BARYTES.

When a lamina of *Palladium* is used to support the *metal of Barytes*, and the *gaseous flame* is made to act upon the latter, it

spreads over the surface of the *Palladium*, forming an *alloy* with it, which externally resembles a *bronze varnish*. In one of these experiments, small beads were left upon this *alloy*, which, when cut by a file, exhibited a metal resembling *silver:* but their surfaces becoming soon altered by exposure to the air, and covered with an *oxide*, the file was again applied; and again the same reguline *metallic* lustre was developed.

XC. PALLADIUM WITH COPPER.

The two metals were combined in equal parts, by bulk; and they united with such rapidity, that it seemed as if they acted upon each other by a powerful mutual attraction. After the *alloy* was formed, it was remarkably fusible; and it was always attended with scintillation, arising from the partial combustion of the *Palladium*. This *alloy* is of a pale colour, and easily cut by the file; but it is susceptible of a very high polish.

XCI. BRITTLE REGULUS OF RHODIUM.

This substance was presented by Dr. *W. H. Wollaston*. The author expected that he should be able to render it malleable by the action of the *gaseous flame*. He found this, however, to be impracticable, owing to some impurity which no degree of heat would altogether expel. As soon as fusion commenced, the metal came away in *white* fumes; but the residue was always brittle. An endeavour was therefore made to purify it, according to the method pointed out by Dr. *Wollaston*. The *regulus* was first melted by a common *blow-pipe* upon *charcoal*, with four times its weight of *lead*. It was then dissolved in *nitro-muriatic* acid; two parts of *muriatic* being added to one part of *nitric* acid. A complete solution of the whole was not effected; owing to a deficiency in the relative proportion of the two acids. After evaporation to dryness, a *salt* was obtained, which, being dissolved in *alcohol*, yielded a *yellow* precipitate to pure *ammonia*. This precipitate, when fused by the *gaseous flame*, became

extremely malleable; but it was found to consist of *Rhodium* still combined with *Lead*. The *alloy* was therefore once more submitted, upon *charcoal*, to the action of the *gaseous flame;* and, by further continuance of the heat, the *lead* was at length either volatilized or vitrified, and the *Rhodium* rendered *perfectly malleable*. Professor *Cumming*, who, with other chemical friends, was present at the experiment, himself beat out the *Rhodium*, which had been obtained in the form of a globule, into a thin circular lamina of the pure metal.

XCII. MURIATE OF RHODIUM.

A small portion of this *salt*, of a *red* or *rosy colour*, had been given to the author by the Reverend Archdeacon *Wollaston*, when Professor of *Chemistry* in the University of *Cambridge;* having himself received it from his brother. Its purity, therefore, may be inferred. Being placed in a *charcoal* crucible, it admitted of easy *fusion*, attended with occasional *combustion*. The metal was then revived. At first it appeared, externally, of a *jet-black* colour, like the *metallic slag* of *Barytes*. Upon being again exposed to the *gaseous flame*, it began to boil vehemently, and was in part volatilized. There then remained a brilliant globule of metal, resembling the purest *Platinum*. This metal was *malleable*. By further continuance of the heat, it was entirely volatilized. The experiment was again repeated; and the metal again obtained, in a malleable state. In this state, after being hammered, it was sent to Dr. *Wollaston*.

XCIII. GRANULAR ORE OF IRIDIUM.

This experiment was made at the request of Dr. *Wollaston*. Some very pure grains of the *ore of Iridium*, which he had sent to Professor *Cumming*, were placed within a *charcoal* crucible, and brought into contact with the *gaseous flame*. At their first exposure to heat, they became agglutinated, and partially fused,

shining, in the parts where fusion had commenced, with a bright *Platinum* lustre. Afterwards, the agglutinated mass of the *Iridium* was placed within a *plumbago* crucible, and once more exposed to the *gaseous flame*, when the metal was perfectly melted. It then began to boil, and also to burn with scintillation, depositing a *reddish-coloured oxide* upon the surface of the *plumbago*. Nothing now remained within the crucible but the vitriform *oxide of Iridium*, in the form of *glass*,* which was sent to Dr. *Wollaston*.

XCIV. GRANULAR ORE OF IRIDIUM AND OF OSMIUM.

Some grains of this ore, which had belonged to the late Professor *Tennant*, being placed in a *charcoal* crucible, were fused with difficulty into a single globule; a combustion of the *Iridium* taking place the whole time, accompanied by an evident volatilization. The globular residue was afterwards flattened upon an anvil, by severe shocks of a hammer. The metal, however, proved to be so exceedingly hard, that it was only partially extended by this violent pressure. The sharpest *Carron* files could scarcely rase it: constant friction with one of those files, during thirty minutes, being necessary to disclose an even surface of the metal: it then exhibited a degree of metallic lustre, reflecting almost as much light as the *alloy* of *Nickel* with *Palladium*.

* "Metallic oxides, after fusion, are called *glass*, because they acquire a good deal of resemblance, in some particulars, to common glass." (*Thomson's Chemistry*, vol. I. p. 475. *Lond.* 1817.) Is not common glass itself a result of the fusion of metallic oxides? Unless, indeed, it can be proved that *Silica* is not a metallic oxide.

POSTSCRIPT.

To the preceding Experiments may be added two, belonging to a Class of bodies remarkably distinguished from the preceding; namely, the *Combustibles*, commonly so called.

XCV. CRYSTALLIZED CARBON. (*Diamond.*)

A fine octahedral *diamond*, of an amber colour, weighing six *carats*, was placed within a *charcoal* crucible, and exposed to the action of the *gaseous flame*. At the first application of the extreme heat, it became limpid and colourless; afterwards, it appeared of a pale *white* colour; it next became opaque, and resembled *ivory*, being now diminished in bulk, and having sustained a loss of weight. After this, one of the solid angles of the octahedron disappeared, and the surface of the *diamond* was covered with bubbles. The other solid angles then vanished; and there remained only a minute spheroïdal globule, shining with a considerable degree of *metallic* lustre. Lastly, every atom was volatilized; the whole experiment being completed within three minutes from the time of its commencement.

XCVI. CABBURET OF IRON. (*Plumbago.*)

A very pure fragment of this substance, which had been analyzed by the late Professor *Tennant*, was exposed, *per se*, to the utmost intensity* of the *gaseous flame*. Its *fusion* was immediately evident, attended with a vivid scintillation. No change

* By gradually turning the *stop-cock* of the *jet* belonging to the *Gas Blow-pipe*, the volume of the *gaseous flame* may be diminished or increased at pleasure; and, of course, the degree of heat may be modified; its *utmost intensity* being afforded when the *stop-cock* is quite open.

of colour was, however, to be observed in the flame. Upon examining the appearance of the *plumbago*, after its fusion, its surface was found to be covered with innumerable minute globules; some of which exhibited a limpid and highly transparent *glass;* others, a *glass* of a brownish hue; the larger globules being *jet-black* and opake, with a dark *metallic* lustre; but so exceedingly minute, that their real nature could not be ascertained. When placed in *naftha*, they sank to the bottom of the liquid, disengaging gaseous bubbles. Water produced no change in their appearance: they fell rapidly to the bottom, and remained there unaltered.

No. VII.

Address read at the First Meeting of the Cambridge Philosophical Society, stating the Design and Objects of its Institution; written at the request of the Council.

AT the opening of the first Meeting of the CAMBRIDGE PHILOSOPHICAL SOCIETY, the Members of the *Council* avail themselves of the earliest opportunity that has been offered to them, of expressing to the Society their congratulations upon its Institution. Convinced, as they all of them are, of the advantages likely to result from the establishment of such a Society, they do not hesitate to declare their opinion, that an event of more importance, as affecting the best interets of Science, has rarely occurred in the annals of the University.

A Century has now elapsed, since the celebrated WOODWARD prefixed the following axiom, to his "*Essay upon the Natural History of the Earth,*" which took the lead in subjects of *Geological* inquiry. "From a long train of experience," said he, "the world is at length convinced, that *observations* are the only sure grounds, whereon to build a lasting and substantial Philosophy. All partyes are so far agreed upon this matter, that it seems to be now the common sense of Mankind."* For this reason, when he composed his work, as he himself states, "He gave himself up to be guided wholly by matter of fact; intending to steer that course which is agreed, of all hands, to be the best and surest; and not to offer any thing but what hath due warrant from Observa-

* Nat. Hist. of the Earth. p. 1. Lond. 1723.

tions."* Unfortunately for the fame of this distinguished Naturalist, and for the University to which he bequeathed his valuable Collection, the want of a Society affording the means of Philosophical communication, caused his immense treasure of facts to remain hoarded in a place by no means worthy of the collection, or convenient for its arrangement. Hence the hardly credible truths which are now beginning to come to light respecting the *Woodwardian Collection;* hence, the extraordinary circumstance, first made known by the late *Professor,* the *Rev. J. Hailstone,* that the *Corundum Stone,* (a substance of such singular utility in the arts, and whose supposed discovery, as distinguished from other Minerals, was attributed to *Dr. Black* of Edinburgh) was not only known to *Woodward,* but specimens of it existed unnoticed in his Cabinet many years before *Dr. Anderson* of Madras sent to Europe the examples upon which *Dr. Black* founded his observations. The same may be said with regard to other bodies; and especially that remarkable substance called the *Native Meteoric Iron* of *Pallas;* also in the *Woodwardian Collection.*† To obviate even the possibility of such occur-

* Ibid. "The observations I speak of," observes the same Author, p. 3. "were all made in *England;* the far greatest part whereof I travelled over on purpose to make them; professedly searching *all places* as I passed along, and taking a careful and exact view of *Things* on all hands as they presented; in order to inform myself of the *present condition* of the Earth, and all *Bodyes* contained in it, as far as either *Grottos,* or other *Natural Caverns,* or *Mines, Quarries, Colepits,* and the like, let me into it, and displayed to sight the interior parts of it."

† To prove this remarkable fact, *Professor Hailstone* purchased a specimen of the *Native Meteoric Iron* of *Pallas,* and placed it in the *Woodwardian Collection* by the side of *Woodward's Specimen;* that their identity might be the more easily recognized.

rences in future; to lay open channels of communication for facts connected with the advancement of Philosophy, and also to bring together men who are engaged in common pursuits of Science, is the main object of the CAMBRIDGE PHILOSOPHICAL SOCIETY. The zeal and promptness which have been manifested in its Establishment, and a view of the names which have been already added to the list of its Members, excite a reasonable hope that, by means of it, a fund of valuable information may be gradually accumulated. Some idea may be formed of the usefulness of such an Institution, simply by referring to the various periodical Journals, edited, either by individuals, or by societies, in different districts of this kingdom; in which the philosophical contributions of the members of this University, being frittered and squandered away in detached and distant parts, appear to be almost without existence; but if the same scientific productions had been concentrated, their testimony of the industry and abilities of their authors, would not only be creditable to the University, but would also tend more effectually to the advancement of Science. It is one of the objects of the Society, that a Volume for giving publicity to such writings, should occasionally be sent forth; not at any fixed or stated periods, but so often as due and approved materials can be selected for this purpose; and to this end it is proposed, that *Philosophical Communications* should be encouraged from every quarter likely to afford them, by rendering to their authors every possible assistance which may be necessary for their publication. Letters have been already transmitted from the Secretaries to persons who are likely to promote the intentions of the Society; and it is requested that all its Members will themselves further the designs of the Institution, by inquiring for communications relating to the several branches of *Natural History* and *Natural Philosophy;* especially by means of their foreign

correspondence, and the observations they may be able to collect from scientific men engaged in foreign travel. Whatsoever may tend to illustrate the History of the *Animal*, the *Vegetable*, or the *Mineral* Kingdom; of organized or of unorganized Existences; will be deemed valuable acquisitions. Of course it is hardly necessary to add, that all papers on the subjects of *Zoology*, in all its branches; of *Botany; Mineralogy; Geology; Chemistry; Electricity; Galvanism; Magnetism;* and all *Mathematical Communications* connected with the subjects of *Natural Philosophy*, will be thankfully received, and always duly acknowledged.

The want of a sufficient incitement towards inquiries of this nature, after University Students have commenced Graduates, has been sometimes considered as a defect in the scheme of University education. At that important period of life, when the application of philosophical studies should begin, Academical Students seem to have acted under an impression, that they have brought their studies to a termination. Or, if a disposition should prevail, to approach the studies of Nature, under the conviction that it is better, "*de re ipsa quærere, quam mirari,*"* this tendency, of such incalculable value in youthful minds, become checked, either by the retirement or consequent want of intercourse with literary men, to which the calls of professional duties consign them, or by the little honour which in all our Universities has hitherto awaited the inquiry. The valedictory observations of *Bishop Watson* afford a decisive confirmation of this truth:† and the reproaches cast upon our country by the celebrated *Kirwan*‡ may be still considered as not altogether inapplicable. "In *Sweden* and

* Seneca.

† Watson's "Miscellaneous Tracts," vol. II. p. 438. Lond. 1815.

‡ Min. Pref. p. 1. Lond. 1784.

Germany," says he, "*Mineralogy* is considered as a Science worthy the attention of Government. There are Colleges in which it is regularly taught; it forms a distinct and honourable Profession; like that of the Soldier, the Merchant, or the Barrister; its superior officers form a part of the administration of the state. Young Students fraught with the knowledge to be acquired in their own Country, are sent abroad to glean all that can be collected from a more diversified view of Nature. This example has been followed by France, Russia, and Spain. *Chemistry* too, the Parent of *Mineralogy*, is cultivated by the most enlightened nations in Europe, and particularly in France, with a degree of ardour that approaches to enthusiasm. In England, on the contrary, it receives no encouragement from the public." These observations which that eminent Naturalist then applied to the studies in which he was more particularly engaged, may to a certain extent be yet directed towards every other branch of *Natural Philosophy*. In the posthumous works of Dr. *Hooke*, which were dedicated to Sir *Isaac Newton*, when he was President of the Royal Society, by its Secretary *Waller*,* we find their author maintaining, that the neglect shewn to *Natural Philosophy* has been characteristical, not of this country alone, but of all nations and in all ages. "Learned Men," he complains, "take only a transient view of *Natural Philosophy*, in their passage to other things; thinking it sufficient to be able to talk of it in the phrase of the school. Nor is it only so now, but it has been so almost in all ages; so that for about two thousand years, of which we have some account in History, there is not above one quarter of that space in which men have been philosophically given; and among such, as have been

* Hooke's Present state of Natural Philosophy; see Posthumous Works, p. 6. Lond. 1705.

so, several of them have been so far disjoined by Time, Language, and Climate, by manner of Education, manners, and opinions, and divers other prejudices, that it could not be expected it should make any considerable progress."

Yet the effect of such studies upon the mind, and especially in places appropriated to public education, and in an age when false philosophy and irreligion have been so alarmingly manifested, may perhaps secure them a more favourable reception; since it requires no argument to prove that the evidences of Religion always keep pace, and are progressive, with the discoveries in Natural knowledge. After a long life entirely devoted to the studies of *Natural History*, LINNÆUS placed over the lintel of the door of his Museum an inscription which was calculated to convey to the mind of every approaching Student a conviction of this truth: INNOCUÈ VIVITO! NUMEN ADEST!*

Having thus set before the Society the main design and objects of its Institution, the Council beg to call the attention of this meeting to considerations of a subordinate nature. It will be necessary to provide some place in which the future Meetings may be held, and where a repository may be formed for the preservation not only of the archives and records of the Society, but also of such documents, books, and specimens of *Natural History*, as may hereafter be presented or purchased. The utmost economy will at present be requisite in the management of the Society's funds; and therefore if the consent of the University could be obtained, it would be highly desirable that the expenses of printing the Society's

* See Linnæus's Diary, written by himself, in Pulteney's Linnæus by Maton, p. 563. Lond. 1805.

Transactions, should be defrayed by the University.* His Royal Highness the Chancellor has accepted of the Office of Patron, and his Letter, containing the expression of his approbation, will be read by one of the Secretaries. The present Vice-Chancellor; our High Steward; both our Representatives in Parliament; and many other distinguished Members of the University, who are not resident, have also contributed towards the undertaking; and there is therefore every reason to hope, that the Graduates of this University, who associated for the Institution of the CAMBRIDGE PHILOSOPHICAL SOCIETY, by their assiduity and diligence in its support, and by their conspicuous zeal for the honour and well-being of the University; will prove to other times, that their *Lives*, and their *Studies*, have not been in vain.

* This is now done.

No. IX.

List of Dr. Clarke's Papers, in Thomson's Annals of Philosophy.

Besides these there are several Papers, whose Titles have been already inserted, and one upon the Blow-pipe, in the Journal of the Royal Institution.

Two Letters to Dr. Thomson, announcing the fusion of refractory substances, and the partial reduction of the earths; the former dated Cambridge, Aug. 23, 1816; the latter, Sept. 9.—Annals, Vol. viii. p. 313.

Some observations respecting the new metals obtained from Barytes and Strontian; also, of a pure metal observed in the decomposition of Borax, together with other remarks on the means of analysis, afforded by burning a highly compressed mixture of the gaseous constituents of water. In a letter to the Editor.

N.B. At the end of this letter is an account of the first explosion.

Annals, Vol. viii. p. 357.

Farther observations respecting the decomposition of the earths, and other experiments made by burning a highly compressed mixture of the gaseous constituents of water.—Annals, Vol. ix. p. 89; Jan. 1817.

Improvement in the Oxygen and Hydrogen Blow-pipe. Letter to Dr. Thomson, Feb. 1817.—Annals, Vol. ix.

A continuance of the observations made by burning a highly compressed mixture of the gaseous constituents of water.—Annals, Vol. ix. p. 194; March, 1817.

Farther improvement in Broke's Blow-pipe, in a letter to Dr. Thomson.—Annals, Vol. ix. p. 326; April, 1817.

Account of some experiments made with the Gas Blow-

pipe; being a continuation of former observations upon the same subject.—Annals, Vol. x. p. 133; Aug. 1817.

Account of an improvement made in the Gas Blow-pipe; with some additional remarks upon the revival of metals from their oxides, and of the fusion of refractory bodies, by means of the same instrument.—Annals, Vol. x. p. 373; Nov. 1817.

Account of some remarkable minerals recently brought to this country from the island of Jean Mayen, in the Greenland Seas, North Lat. 71°; also, a description and analysis of a substance called Petalite, from Sweden.—Annals, Vol. xi. p. 194; March, 1818.

Account of a meteor, apparently accompanied by matter falling from the atmosphere, as seen at Cambridge by Professor E. D. Clarke, of that University, and other persons who were eye-witnesses of the phenomenon.—Annals, Vol. xi. p. 273; April, 1818.

On the Aphlogistic Lamp.—Annals, Vol. xi. p. 304; April, 1818.

Farther account of Petalite, together with the analysis of another new Swedish mineral, found at Gryphytta, in the province of Westmania, in Sweden.—Annals, Vol. xi. p. 365; May, 1818.

Analysis of a specimen of the Diamond Rock.—Annals, Vol. xi. p. 464; June, 1818.

On the colouring constituent of Roses.—Annals, Vol. xii. p. 126; August, 1818.

On the colouring constituent of Roses, and of the flowers and leaves of other vegetable bodies.—Annals, Vol. xii. p. 296; Oct. 1818.

Notice respecting the discovery of Pearl Sinter.—Annals, Vol. xii. p. 464; Dec. 1818.

Account of a newly discovered variety of green Fluor Spar, of very uncommon beauty, and with remarkable properties of

colour and phosphorescence.—Annals, Vol. xiv. p. 34; July, 1819.

Method of obtaining Nickel in a state of perfect purity and malleability.—Annals, Vol. xiv. p. 142; Aug. 1819.

On the alloy of Platinum and Lead (accidental error for Tin).—Annals, Vol. xiv. p. 229; Sept. 1819.

On the alloy of Platinum and Tin.—Annals, Vol. xiv. p. 470; Dec. 1819.

Observations on Gehlenite, made during a series of analytical experiments upon this mineral, which prove that it contains Potass.—Annals, Vol. xiv. p. 449; Dec. 1819.

Observations upon the ores which contain Cadmium, and upon the discovery of this metal in the Derbyshire Silicates and other ores of Zinc.—Annals, Vol. xv. p. 272; April, 1820.

Regular crystallization of Olive Oil.—Annals, Vol. xv. p. 329; May, 1820.

On the chemical examination, characters, and natural history of Arragonite, explaining also the causes of the different specific gravity of its different sub-varieties.—Annals, New Series, ii. 57; July, 1821.

On crystallized Magnesian Carbonate of Lime, from Alston Moor in Cumberland; crystallized Plumbago, and some other minerals from the mines of Cumberland.—Annals, New Series, ii. 415; Dec. 1821.

On Cadmium and the habitudes of some of its ores, shewing the means of detecting the presence of the metal in English ores of Zinc.—Annals, New Series, iii. p. 123; Feb. 1822.

On the presence and proportion of Cadmium in the metallic sheet Zinc of Commerce (last paper he ever wrote).—Annals, New Series, iii. p. 195; March, 1822.

THE END.

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